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DENTAL PRACTITIONER

monthly journal for the Practitioner and his Staff

VOL. II, NO. 9

MAY, 1952

[*Incorporating the Official Supplement of*
The Dental Laboratories Section of the Surgical Instrument Manufacturers' Association]

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*(Incorporating the Proceedings of the British Society of Periodontology
and the Official Supplement of the S.I.M.A.—Dental Laboratories Section)*

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VOL. II, No. 9

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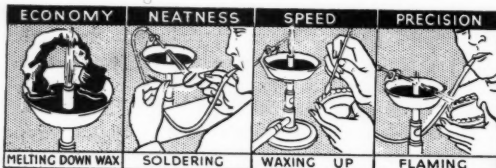
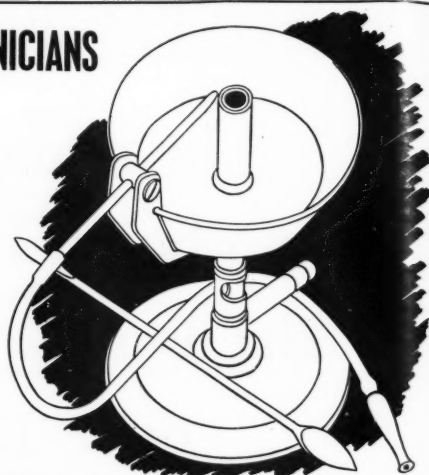
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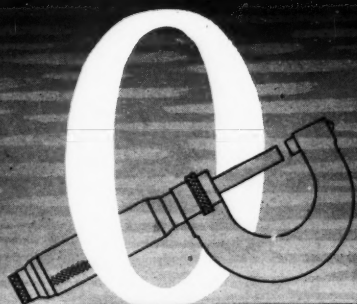
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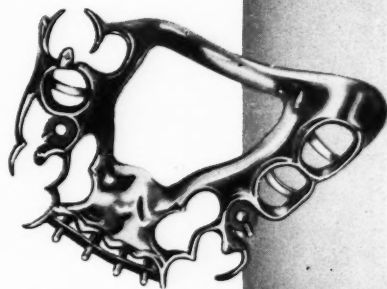
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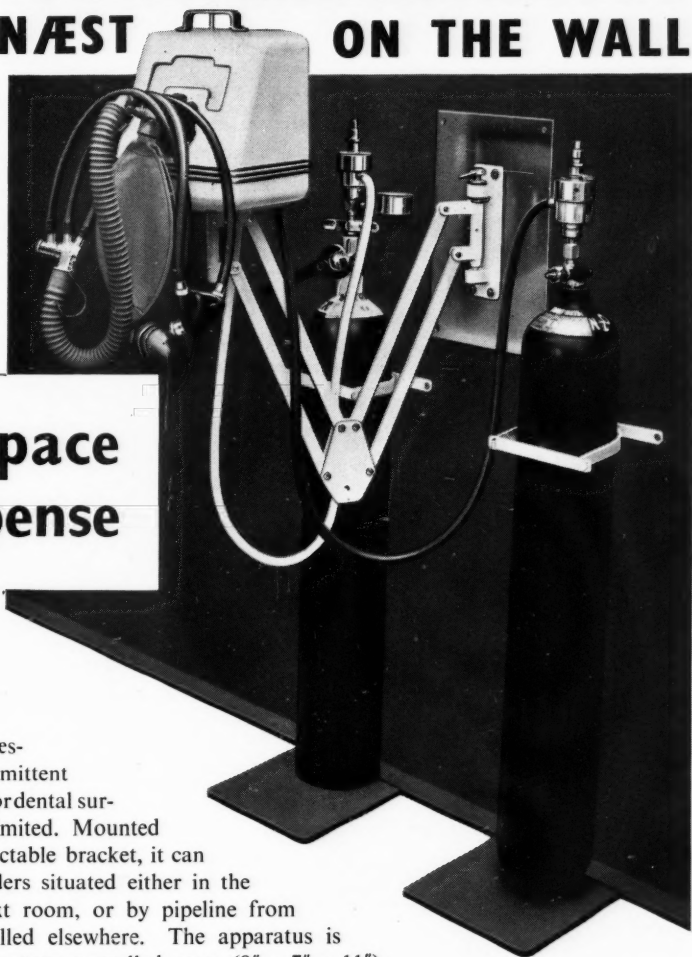
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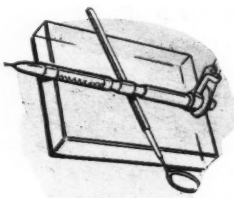
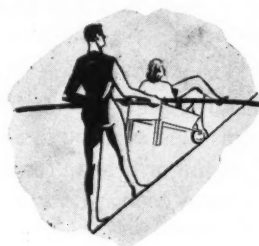
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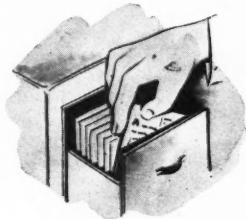


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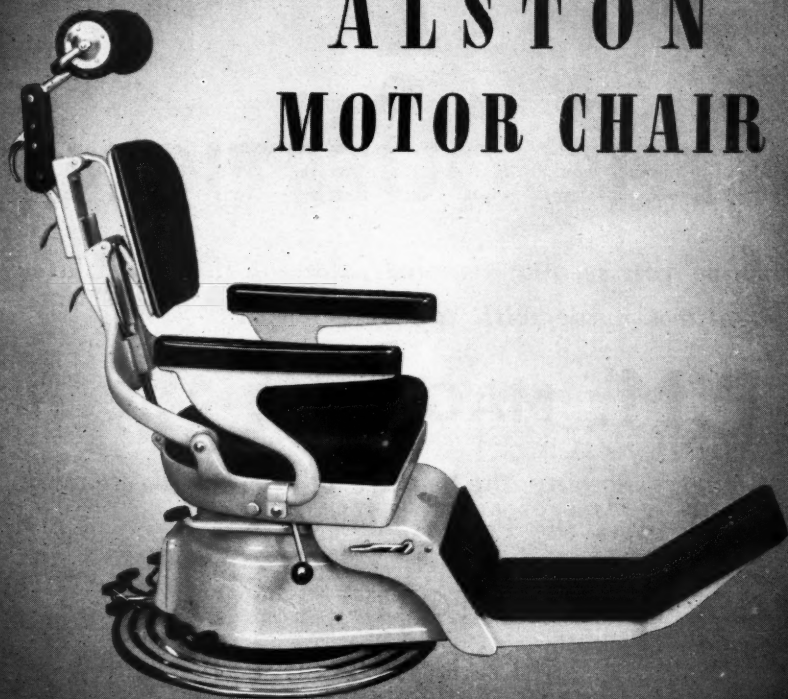
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THE DENTAL PRACTITIONER

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EDITORIAL

"THEY ALSO SERVE . . ."

DURING the Easter vacation it was the Editor's privilege and pleasure to attend the Annual Dinner of the British Dental Nurses and Assistants Society held this year in Birmingham. All praise to Mr. P. E. Grundy, L.D.S., of Leyland, Lancashire, whose foresight, determination, and organizing ability brought about the formation of this Society in 1940, despite a complete lack of official backing or assistance from the Dental Associations.

It would appear from statistics obtained that there are only some 3000 dental nurses actively employed in this country and that more than half of these are members of the B.D.N. & A. Society. This figure of 3000 would certainly seem extremely small when one considers that there are no less than 15,000 dentists on the Register of the Dental Board. True, some of these are not actively employed, but even if one took 12,000 as a more accurate number, the figure of 3000 chairside assistants seems pathetically small, and in fact completely incongruous. Is this perhaps one of the reasons for the so-called necessity for Ancillaries? Surely no dentist working alone can cope with more than 60 per cent of the

amount of treatment carried out by a colleague working in conjunction with a properly trained chairside assistant. Would the general surgeon contemplate doing his operations without the assistance of members of the nursing profession? The answer is obvious, and yet here we have some 9000 or more dental surgeons working alone and unaided day after day in their surgeries. One is tempted to ask why; and the answers should be most illuminating and interesting.

The Dental Nurses and Assistants Society should receive the full support of every practising dentist who employs a chairside assistant. It is a good Society having no ulterior motives other than 100 per cent membership, service to their members, to the profession itself, and to assist in the proper training of its members. An Examination Board was set up in 1943, completely separated from the Society and examinations are held every year, a suitable certificate being presented to the successful candidates.

The Society's chief aspirations are: (1) To obtain the official title of "Dental Nurse" from the Minister of Health for those who have

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AN APPROACH TO THE CHILD PATIENT

By ILJA FRISCHMANN, L.D.S. R.C.S. Eng.

London Hospital Orthodontic Department

WHEN talking about the approach to children in dental treatment it appears quite obvious that there must be certain variations—besides other factors—according to the age of the patient. To simplify matters I would suggest that we only deal with the child of about 5 to 7 years who possibly has had no dental treatment before.

Usually the mother will arrange for an appointment—requesting a time after school hours, as she does not wish the child to miss any schooling.

Eventually mother and child attend at the appointed time and we may be able to watch a performance of this kind: More often than not it happens that the mother brings the child into the surgery, pushes him somehow in the chair, and says something like: "Now Johnny, be a good boy, I told you it will not hurt and remember what I promised to buy you if you are good".

Next would be the dentist's turn, and his introduction to the new patient may be to follow up the mother's words with some tale which probably nobody believes. The receptionist, being a female, and therefore feeling obliged to accept the responsibility for handling any children, may have to say something as well, which may sound very nice but not come very near to the truth. By now the child sits in the chair not having said or done anything but probably sensing an atmosphere of deceit and wondering what might happen next.

The true facts may be something as follows: The mother dislikes dental treatment very much and fears it, is sure her child is going to be hurt, and consequently is very worried. With the best of intentions she has done everything wrong.

First of all, it is not the right thing to start the dental treatment of a young child in the afternoon. Normally a child has done a day's work at school and spent much of his energies

by then. He is gradually beginning to feel tired, his mental alertness is lowered, and so he is simply not in a fit state to take in the new and very strange surroundings of a dental surgery. The dentist also, and for good reasons, might feel much more capable of dealing with children in the morning. Appointments, therefore, should be arranged as early as possible in the day.

To say to the child "it won't hurt" cannot have any other effect than to suggest the possibility of pain. At this stage the child might not even have thought of pain, and it is only the mother's words which bring ideas about it into his imagination. Similarly, the promise of a present may be an indication to him that he must be ready for something unpleasant and that its purpose is to sweeten the bitter pill. I never know what mothers hope to achieve by such methods and I often wonder if they have thought about it themselves.

But, whilst blaming the mother, I cannot understand the dentist who, allowing these things to go on, hopes to bring the treatment to a satisfactory conclusion. If the dentist is going to treat his child-patients he must be capable and ready to deal with them himself. He cannot expect, so to speak, to have them served to him by somebody else ready for treatment, excluding, of course, those cases where a general anaesthetic is necessary. But before the dentist can start his work it is very important first to dispose of the mother in a satisfactory way. I am in favour of the mother being present in the surgery for the following two reasons: It is quite understandable that the mother might be worrying whilst kept outside, and when the child eventually returns from the surgery might upset him by asking unreasonable questions. Secondly, it is only natural that the child will have a desire to talk about his new experience to his mother, and this conversation can be of real

help for future treatment when both know what actually happened.

But one thing must be made absolutely certain: there must be no interference from the mother whatsoever. Many mothers wish to give some information before the treatment commences. In most cases it is sufficient that the receptionist has a talk with the mother and delivers messages to the dentist whilst they are still in the waiting room. As soon as mother and child enter the surgery the receptionist has the very important task of making the mother sit down without any delay in a chair which has previously been placed well to the back of the surgery. The undivided attention of the dentist is concentrated on the child. As nothing is gained by rushing children it is advisable to let them have a good look round when they enter the surgery for the first time, which means an entirely new world to them. This includes the dentist as well, if they have not met before.

After this the proceedings can start, and their success will depend on the methods the dentist wishes to adopt. A normal child likes to be active and to perform various tasks. The foundation of good relations between dentist and child is that the child must have absolute trust in everything the dentist says. This trust must be gradually built up, and during the whole of the treatment the greatest care must be taken that no doubt arises in the child's mind. To show the child from the start that there is room for activities of his own, I do not push him in the chair and do not just tell him to get into it, but ask him something like: "Do you think you could climb up into this big chair?" This is usually accomplished without great difficulty and offers the first opportunity for well-earned and most encouraging praise. This is followed up through the whole of the treatment by, as far as possible, suggesting tasks which when properly performed are always rewarded by praise. Examples of these are: opening the mouth widely for a certain time; keeping proper position in the chair; rinsing of the mouth. Being justly praised for well-performed tasks puts the child into a happy mood and gets him ready to co-operate whenever it

becomes necessary. Foremost in my mind is the aim to gain the confidence of the child from the beginning. According to his attitude, this starts very often by my giving a rather solemn promise that I will always tell him beforehand what I am going to do, explain it to him, answer any questions, and stop immediately whenever he requests me to do so.

In this connexion the first explanation is given. I do not just say to the child: "If you wish to stop me for any reason, raise your left hand". I point out to him that he has to keep his mouth open and therefore he cannot talk. So we agree on a hand signal: If he uses his right hand, well, he will smack me in the face, and, as I am sure he would not like to do that, the only thing to do is to use the left hand, so we agree to this.

The important point here is really to stop immediately the hand goes up, even if it is sometimes hard on one's patience. It may become tedious and irritating, but it brings home to the child that a promise is being kept under all circumstances, and that means a great step forward in gaining confidence.

At a later time, when the child has become more familiar with dental treatment, it is gradually made quite plain that the privilege of stopping me must not be abused. Besides keeping to every promise made, it is of the greatest importance to be truthful so that the child is never disappointed in his trust. It is no good saying to the child, "It will not hurt", and then go on working until it does hurt. You may be able to finish a job in this way in quick time, but you can be sure that the child will never forget; that in spite of your promise, it was painful; and thereby the foundations for any later treatment have been destroyed. On the other hand, once the child knows you and trusts you, you can easily say: "I want you to help me, this is what I am going to do now, and it might give you a little sting or a little pain. Would you help and stick it for a second?" I add to this that I have always told him the truth and he can therefore believe me now. So he can be sure that there will not be more in it than I say. It is very gratifying to see how the majority of children are only too ready to give their

support, even to the point of suppressing an unwanted tear.

Of course, the whole treatment is not possible unless you are prepared to show great patience. Some dentists think they cannot afford time to be patient and try to push on with the treatment. I believe this is a wrong calculation. It might take more time in the beginning to deal with a child in a patient manner, but he will be better settled soon and the original expenditure of time will be well compensated for during further treatment, when everything can be done much more quickly and easily with the full co-operation of the child.

A real understanding of the child cannot be achieved without patient handling. The reactions of a child to the dentist's efforts vary to a large degree, according to character, temperament, environment, and direct influence by third persons. In this connexion it may be worth while to investigate certain difficulties. First of all, the child that simply cries. The questions that must be answered here are: What sort of crying is it? Is it crying that has just been put on, or is it genuine—due to feeling worried, unhappy, or uncomfortable? In the first case the child probably knows from a long experience at home that he can get out of everything by crying as loudly as possible, because nobody wants to have his peace disturbed. The reactions of these children are sometimes most startling when you encourage them to have a good cry. That is contrary to their routine and comes as a complete surprise to them. When this is followed up after a little while with the explanation that his crying is just put on and won't in any way deter me from progressing with my work the foundation for happy relations has been laid in many cases.

Quite different from these are the children who are truly in a state of distress and tears just flow as a result of this condition. The obvious answer would be to find the cause and remove it. Cases of this sort need very understanding and patient questioning. Very often it will be found that the child has overheard conversations with not very flattering remarks about dental treatment, or a friend at school,

on hearing that he is going to the dentist, found great pleasure in frightening him by telling some story about his own experiences.

Generally speaking, most of these children have built up in their mind a distorted picture of dental treatment or even had a bad experience of their own previously, and now it is the difficult task of the dentist to allay the fears and gain the confidence of the child. This is made more complicated still if the child is not prepared to respond to any talking at all. All efforts from the dentist simply do not seem to reach them and practically no contact is established. In these difficult cases I never do any actual treatment during the first visit, but before dismissing the child I ask him for a great favour and that is to draw me a picture of whatever subject he chooses and bring it with him for the next visit. This request has never been refused yet. On the contrary, every child seems to enjoy drawing a colourful picture. I always encourage them to choose the subject themselves as I hope they might then just simply make a drawing of something which is on their mind, and that is exactly what I want to know. It is surprising to see how the atmosphere is changed when on the second visit the picture is handed to me. It is discussed at some length and usually some special points are found which justify praise. The talking is no longer one-sided, as during the first visit, and soon it will be possible to find out why he worries about the dental treatment. It is very interesting to watch how the attitude of these children gradually changes and every new drawing really means a step forward.

Very disheartening cases are those children who simply sit in the chair and even before any treatment has started keep on repeating in a more or less whining tone: "I don't like it". If you ask them what they do not like, they have no other answer for you but just go on as before. Whatever else the dentist may say there is no other reaction and they do not get tired of saying these same words over again and again. No doubt lack of training at home is the cause of this situation, but the dentist has to try and find a way how best he can go on with his work. Firm

handling will be necessary in these cases, and explaining to the children at the same time how much disliked they will be if they keep on in their unreasonable manner.

Concluding, I should like to say that in a short paper it is only possible to touch the fringe of the problems which present

themselves during the treatment of children. Whatever these problems may be, no hard-and-fast rules can be given to solve them. After all, it is the dentist as well whose reactions have to be considered, and it will largely depend on his individuality which approach to his little patients he considers best.

A SIMPLE TECHNIQUE FOR THE EXTRACTION OF INSTANDING SECOND PREMOLARS

By H. E. WILSON, L.D.S., Q.U.Belf.

THE extraction of instanding second premolars appears to present difficulties to many practitioners. I have found most operators still use "straights", root forceps, forceps with narrow beaks, etc., and by a trial of each

handle comes in contact with the teeth on the opposite side of the same arch, or it may be so upright that the handle of the instrument comes in contact with the upper teeth. The same, to some extent, applies when upper root

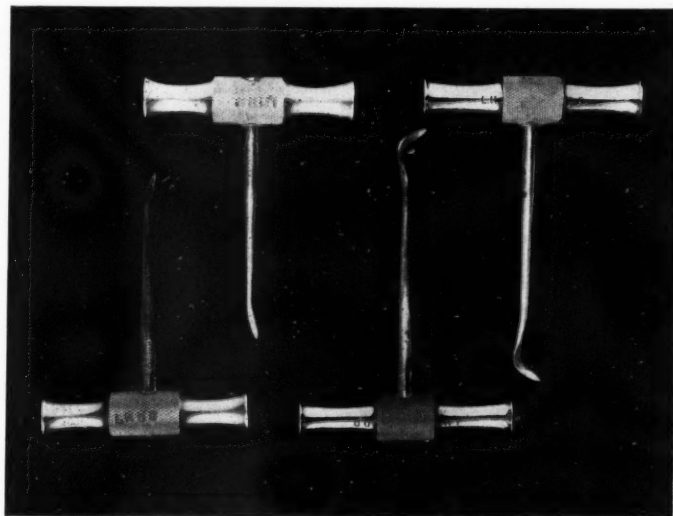


Fig. 1.

select the most suitable, which is often poor at the best. The "straight" may not be suitable since the tooth, if it is in the lower, may incline too much lingually to enable a secure hold of the root to be obtained before the

forceps are used. If the tooth is at an unfavourable angle, lower forceps with a narrow beak cannot secure a hold of the root before coming in contact with the teeth of the opposite arch on the same side. In the upper arch the

obstacles are not so great; nevertheless an instanding upper second premolar often causes some trouble to extract.

To the young patient this fumbling is very frightening and may adversely affect his

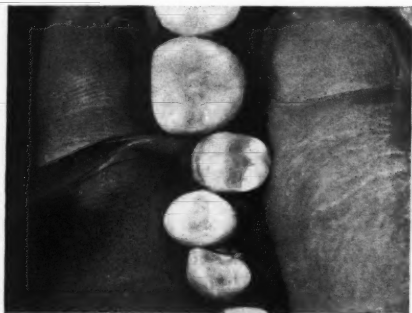


Fig. 2.

confidence in the operator. The method I have employed for nearly nine years is simple and has never failed. All that is necessary to remove the instanding tooth is a Winter's Exolever No. 1 or No. 14 (Fig. 1) or an Apical

Elevator No. 302, 303. The point of the instrument is pressed between the buccal side of the tooth and the alveolar plate at the distal corner of the tooth adjacent to the first molar (Fig. 2). It takes very little pressure outwards or a slight rotation of the handle of the instrument to dislocate the tooth, which can then be lifted out with the fingers or a pair of tweezers.

The method can be employed to remove either an upper or lower instanding premolar and the technique is similar in either case. If the tooth is lying underneath the mucous membrane a short incision the lateral width of the tooth is made and the instrument inserted in a similar manner. If one cusp only is erupted it may be necessary to incise the part of the mucous membrane covering the other cusp before removing the tooth.

The patient is invariably pleased to find that what promised to be a more difficult extraction than usual is in fact such a simple one. Healing is generally uneventful and since trauma is reduced to a minimum there is the least possible post-operative discomfort.

EDITORIAL, continued from page 261.]

passed their examination. A recommendation to this effect was made in 1948 by a joint committee of the then three Dental Associations, the Ministry of Education, and the Ministry of Health. (2) Keener interest by many more dentists in the Society and its aims. (3) That national courses of training and proficiency should be compulsory for all dental nurses.

We make no apology for writing so much about the Dental Nurses and Assistants Society. All those official guests present at their dinner and meetings during the Easter week-end must have been equally impressed. They included Dr. Roper Hall, the President of the B.D.A., Dr. R. O. Walker from the United Birmingham Hospitals, Dr. A. T. Wynne from the Ministry of Education, and dental surgeons who have given help in various ways to the Society, among them Mr. W. J. Bate, L.D.S., of Solihull, Mr. L. A. Philpott,

L.D.S., of Edgbaston, Mr. W. L. Philips, L.D.S., of Birmingham, Mr. H. A. Cohen, of Birmingham, and Mr. R. A. Cohen, of Warwick.

It is sincerely to be hoped that some of you will become interested in this Society, sufficiently in fact to be anxious to help them by lectures, etc., to their local branch in your own area, and in any other possible way. Please write to their enthusiastic general secretary for all information, which will be most gladly given. The address is: Miss M. Jean Smith, 2 Sumner Street, Leyland, Lancs.

Remember that by the employment of properly trained staff we do far more to raise our own status in the eyes of the community than is possible in any other way.

"A wise man will waver, fool is fixed."

—OLD PROVERB.

DENTAL MECHANICS AND MATERIALS

By J. SEEAR, L.D.S. R.C.S.

III. HYDROCOLLOIDS AND ALGINATES

"HYDRO" is from the Greek word for water, which is *hudor*, ὕδωρ. A colloid is a suspension of large solid molecules of a substance in a liquid. Thus a *hydrocolloid* is a suspension in water of solid molecules.

There are two types of hydrocolloids, reversible and irreversible.

Dentocoll was the best known of these substances available in this country before the war, and was of the reversible type, i.e., the

2. Unwrap and insert a stick of Dentocoll in the barrel of the syringe, filling any remaining space with water. Replace the "closed end" of the syringe.

3. Place the loaded syringe in the boiler, in which the water should already be boiling. Do not have the water-level above the barrel of the syringe.

4. Boil for four minutes, then remove the syringe from the boiler and mix the Dentocoll

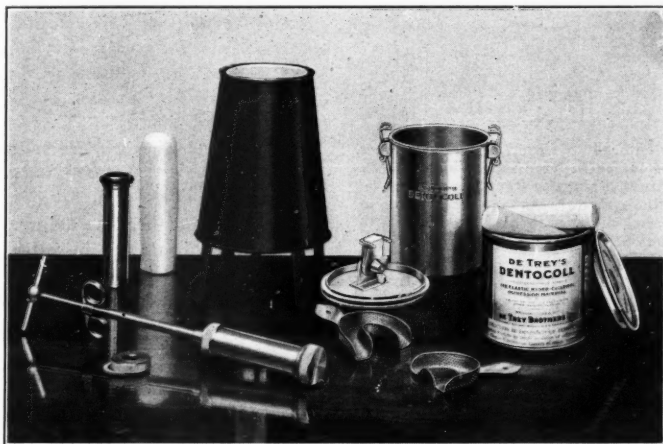


Fig. 1.—The complete equipment for Dentocoll.

solid form on heating became a thick liquid, a *sol*, and on cooling once again became a solid, a *gel*.

Zelex is an example of an irreversible hydrocolloidal material, i.e., a *sol* is made by mixing a powder and liquid and this sets to form a gel by chemical action, and this gel cannot be returned to the *sol* state.

DENTOCOLL

Method of Use.—

Heating and Mixing.—

1. Remove "closed end" of syringe by unscrewing same.

by pushing the mixing rod up and down about a dozen times.

Cooling.—

5. Place the syringe in tepid water for a few seconds and again mix.

6. Repeat two or three times until the barrel of the syringe can be held comfortably in contact with the wrist. *Never* cool rapidly or the material will set around the inside of the barrel.

Filling the Tray.—

7. Pull back the mixing handle (A) (Fig. 2) and the ejecting handle (B). Unscrew "closed end" and push forward the handle B to eject

a small amount of Dentocoll on to the selected perforated tray. (Note that the perforations in the tray are to "lock" the Dentocoll to the

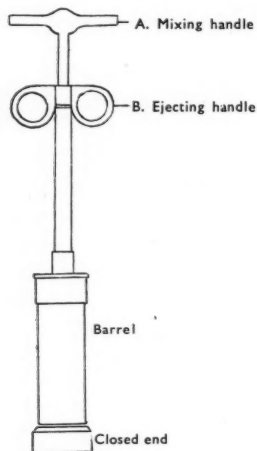


Fig. 2.—Dentocoll Syringe. Note: A larger barrel is used for extra large impressions. When filling lower trays a separate "cap" is screwed on to the end of the syringe. This has a smaller bore in it than the barrel and thus reduces the diameter of the ejected material.

tray.) Press the Dentocoll through the perforations in the tray and then properly fill the tray with more Dentocoll, smooth this with a little "Vaseline", have the patient rinse with cold water, chill the back of the tray and take the impression.

Taking the Impression.—

8. Position the tray in the mouth, using only light and slow pressure. Hold steady for 1 minute and then cool with cold water for 2 minutes, using a saliva ejector to remove the overflow.

Removing the Impression.—

9. Never use force. Free the buccal borders with the fingers to break the atmospheric pressure; then carefully remove the impression, using the handle of the tray. Dentocoll impressions should be poured (i.e., the cast made) immediately, first washing under running cold water to remove saliva, etc. When this is not possible the tray should be kept in a hygrophor, as any exposure to air will result in evaporation of some of the water

content of the material, with a consequent contraction of the impression.

Re-use of Dentocoll.—Break up into small pieces and pack these well down into the barrel of the syringe, leaving about $\frac{1}{4}$ in. unfilled. Top this up with water, screw on



Fig. 3.—A hygrophor. This consists of an airtight vessel having a felt pad soaked in water on which the impression is placed.

closed end and heat as before, but this time for at least 5 minutes in order to destroy all bacteria present.

Dentocoll is made from high-grade Japanese agar-agar. During the war this was, of course,

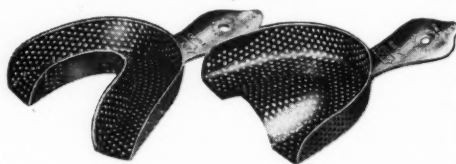


Fig. 4.—Showing type of perforated trays used with Dentocoll.

unobtainable, and therefore other materials had to be used. Agar-agar is a gelatin made from certain forms of seaweed.

ZELEX

Zelex is an *alginate*, extracted also from seaweed. It is an organic chemical, being a salt of a complex organic acid, which is a polymer of *d*-mannuronic acid.

Zelex was the first alginate impression material to be introduced to the dental

profession. It appeared on the market in 1939 and is believed by many to have been a war-time measure to compensate for the loss of agar-agar. This, however, is not exactly so, as the research work on this material was carried out many months before the war started.

The Chemistry of the Setting of Zelex.—When powder Zelex is added to the control solution, the following reactions are involved:—

1. Soft soluble gel formation, so that the gel will flow readily and adapt itself to anything against which it is pressed. At this stage the mix is viscous (tenacious), has a smooth consistency, but possesses no elasticity.

2. Conversion of the soft soluble gel into an insoluble but elastic gel such as calcium alginate. This latter part of the "setting mechanism" is a complicated chemical reaction, and it is because of this that the time factor and other steps in the technique are vitally important to ensure consistently excellent results.

The setting time depends mainly on the following factors:—

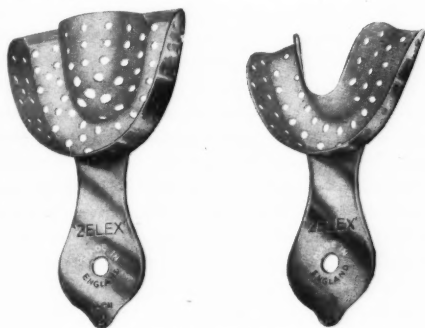


Fig. 5.—Perforated trays for use with Zelex impression material.

1. Temperature. A high temperature speeds the setting; a low temperature retards the setting.

2. Chemical composition of the powder.

3. Concentration and amount of the control solution (retarder) used.

4. Contamination of powder or liquid with foreign materials.

Technique.—Zelex is supplied in two forms: (1) The powder is in a tin, with a tube of control powder and one of alum; (2) In 12-unit packs, which obviates the measuring of powder to liquid and the preparation and storage of the solution.

Technique with Form 1.—

Preparation of control solution: Dissolve entire contents of control powder tube in exactly

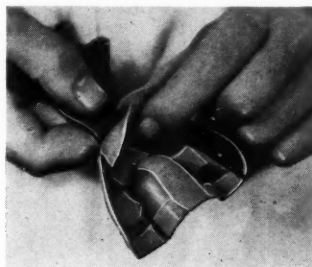


Fig. 6.—Tray having the adhesive tape applied for use with Zelex.

20 oz. of water (1 pint). Store the solution in a well-corked bottle.

Preparation of fixing solution: Dissolve contents of alum tube in 10 oz. of water ($\frac{1}{2}$ pint), and keep in large-sized container ready for immediate use.

NOTE.—The alum solution used with Zelex Plus is for the purpose of forming an insoluble film over the actual impression surface, thus helping to prevent the model material, i.e., plaster, stone, etc., from absorbing moisture from the alginate and thus giving a rough surface to the ultimate cast.

Impression tray: Any type of tray can be used, perforated or plain. Fig. 5 shows an upper and lower perforated tray made especially for use with this material.

When using a non-perforated tray it is necessary to make arrangements for the Zelex to stick to the tray, as the material is not adhesive when set. This can be accomplished in several ways: (1) Smear tray with "sticky wax"; (2) Stick pieces of adhesive tape on the tray (Fig. 6); (3) Smear with sticky wax and add wisps of cotton-wool before the wax hardens (Fig. 7).

With all types of tray, including the perforated type, it is preferable that the periphery also be smeared with sticky wax or covered with the adhesive tape.

Preparing the Zelex mixture: This is very simply carried out by using the balance supplied in the "Introductory Pack" (Fig. 8).

The balance is provided with a sliding plate which is used to adjust the apparatus so that the two cups accurately balance each other.



Fig. 7.—Tray prepared for Zelex with wisps of wool.

The mixing solution is poured into one of the cups, 21° C. being the ideal temperature, and then the Zelex powder is poured into the other cup until the cups balance. The amount

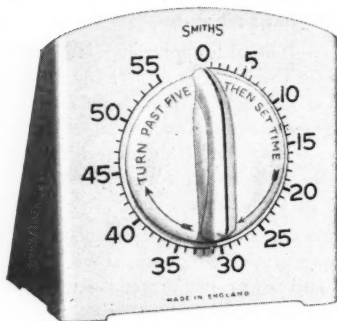


Fig. 9.—Smith's minute timer.

of material used will depend upon the size of the impression to be taken.

Mixing: Pour the solution from the cup into a clean rubber bowl and then add the powder. Spatulate thoroughly for approximately one minute, taking care to ensure that a perfectly smooth mix is obtained. To do

this it is essential that the mixture be constantly spread around the inner surface of the bowl with the flat of a suitably sized and shaped spatula. The importance of this correct mixing technique cannot be over-emphasized, as without a perfectly smooth consistency to the mixture a first-class impression and subsequent model are impossible.

The tray is now filled with the material, but if a plain tray is being used with a sticky



Fig. 8.—Showing balance, tin of Zelex, and tubes of control and alum powder.

waxed surface, it is first necessary to warm the tray to ensure the wax being in an adhesive state.

When a perforated tray is being used, a little of the mixture should be forced through the holes first to ensure adequate retention.

Mixing and loading of the tray should be completed in 1½ minutes, as at this time the material is at the correct consistency for perfect flow against the tissues. Once positioned the tray should remain in the mouth undisturbed for 3 minutes. This gives a total time for the entire procedure, from commencement of mixing to completion, of 4½ minutes. As the timing is of such importance, many practitioners and technicians make use of a timing clock, a typical one of which is illustrated (Fig. 9).

After removing the impression from the mouth it should be rinsed in cold water to remove saliva, etc., and then wrapped or covered with a damp cloth so that the liquid content of the set mixture will remain unaltered.

Technique with Form 2.—

The Zelex 12-unit Pack.—The 12-unit pack obviates the necessity of weighing out the

powder and solution, as the powder is already measured and packed in suitable containers, each of which holds sufficient material for a good-sized impression; also there are tablets for the "setting control solution", which is made up by dissolving the tablet in 35 c.c. of



Fig. 10.—The 12-unit Pack, showing containers of powder, tube of "setting control tablets", water measure, and tube of alum powder.

water. To facilitate obtaining this amount of water, a "water measure" is provided in the pack. A tube of alum powder is also included, and this, when dissolved in 10 oz. of water, is sufficient for the twelve impressions obtainable from the complete pack. (Fig. 10.)

Method of preparation using the 12-unit pack:

(1) Fill water-measure to the brim with water at about 21° C. (2) Put one control tablet in mixing bowl, add a little of the water from the measure, then thoroughly crush the tablet in it. Add the rest of the water and stir for half-a-minute. (3) Add contents of powder container and mix vigorously for 1 minute. The tray, suitably prepared as before, should now be loaded.

Using Zelex to take an Impression from a Model.—There are two methods normally employed to obtain a duplicate model using Zelex.

Method 1.—Soak the model to be duplicated in tepid water for a few minutes, then adapt a roll of plasticine around the model just below the deepest part of the impression. Mix the material in the normal manner, fill the tray, and seat this on the model so that the

periphery of the tray presses into the plasticine. Leave for 10 minutes, remove the impression, and cover with damp cloth.

Method 2.—Bed the model on to a flat base such as a tile, using plasticine, soak model and base in water for a few minutes, then place a cylinder around the model so that it does not touch it and is higher than the model. Weigh out the Zelex as before, but in this instance



Fig. 11.—Showing a partial lower impression taken in a "stock" tray, using Zelex.

add an equal quantity of water to the solution. Mix. Pour the resultant mixture over the model and fill the cylinder to overflowing.

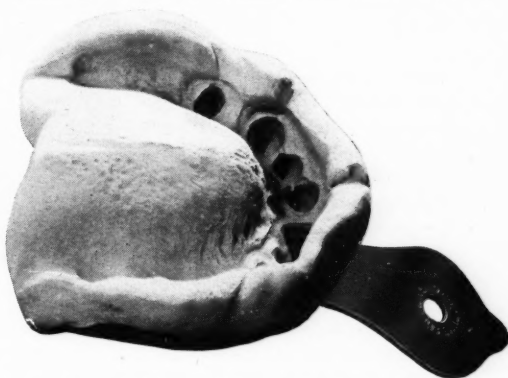


Fig. 12.—Showing a partial upper impression taken in a "stock" tray, using Zelex.

Place a flat tile over the cylinder and weigh this down so that the Zelex is forced and kept in intimate contact with all surfaces of the model. Leave for 20 minutes to set, then remove weights, and the base tile, thus exposing the model, which can readily be

withdrawn by direct traction, leaving the impression inside the ring.

ADVANTAGES OF THE HYDROCOLLOIDS AND ALGINATES

These materials are extremely elastic and are therefore excellent for partial cases, i.e.,

When using Zelex or Dentocoll it is extremely important to get an even thickness of the impression material over the entire area as uneven thicknesses distort readily.

With Zelex impressions the alum solution should only be used *immediately* prior to casting the model. This will be dealt with in a future article. Zelex impressions should, whenever possible, be cast directly, as there is less chance of distortion, there being no time for syneresis (loss of water by evaporation) or imbibition ("taking up" of water).

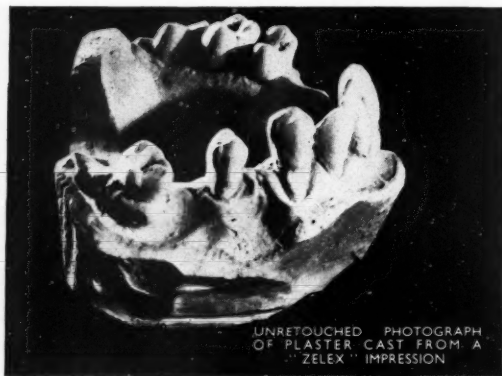


Fig. 13.—Two models made from alginate impressions, showing the great "detail" obtained.

where some natural teeth are still present in the mouth, as they reproduce undercuts perfectly, producing "one-piece" impressions.

Notes.—Zelex is easier to prepare than Dentocoll and needs no cooling in the mouth.

With Zelex hardening of the material takes place first of all where it is in contact with the oral tissues because the temperature is higher there than on the tray. With the reversible hydrocolloids, which require cooling for hardening to take place, the tray area sets first, as it is obviously this area which cools first.

It is an advantage for the hardening to take place first where the material is in contact with the *tissues*, as the chances of distortion are thus considerably reduced.



The author is indebted to the Amalgamated Dental Co. Ltd., and to Dr. S. B. Seth, L.D.S. R.C.S., B.Sc., D.M.D., of their Department of Professional Contact, for much of the data and for the use of many of the blocks.

The next article in this series will deal with the Zinc-Oxide-Eugenol Pastes.

"Experience is the mother of science."
—OLD PROVERB.

SOME PRINCIPLES IN FULL DENTURE CONSTRUCTION

By L. HEYDERMANN

WHEN working on plaster models it is often difficult to visualize the hard and soft tissues in the mouth which they represent. We do not require to make an extensive study of anatomy, but some knowledge of the most important structures will be of value in the correct application of our skill. It is intended here to give a simple outline of some of the

The crest of the body of the mandible, in the edentulous case, is the lower alveolar ridge. On the outer surface, in the premolar region of each side, there is a small opening, the mental foramen, through which pass arteries

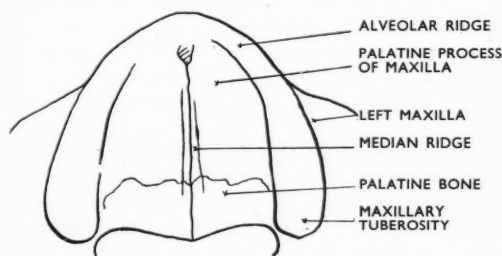


Fig. 1.—The upper jaw.

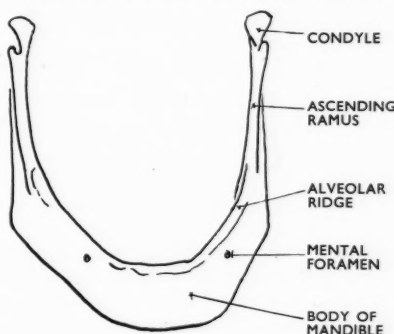


Fig. 2.—The lower jaw.

anatomical features of the mouth and then to apply them to denture construction.

In the edentulous patient, the two maxillary bones which form the upper jaw carry the upper teeth by means of the alveolar processes. On extraction of the teeth the processes become partially resorbed, giving rise to what is commonly called the upper ridge. The rounded termination of the ridge on each side is the maxillary tuberosity. The palatine processes of the maxillæ, together with two small palatine bones behind, constitute the hard palate. At the junction of these bones in the midline there is a ridge, which, when very pronounced, is called the *tonus palatinus*. This ridge is thickest in its middle third, and ends anteriorly in a funnel-shaped depression through which pass arteries and nerves to supply the palate. (Fig. 1.)

The mandible, or lower jaw, has a body, horseshoe-like in shape, which terminates behind in an ascending portion on each side. The ascending rami, as they are called, carry the condyles for articulation with the skull.

and nerves to the lower lip. In older patients the mental foramina may be very near the crest of the ridge. (Fig. 2.)

As will be explained later, it is important in designing a full denture to know something of the musculature of the mouth. For the sake of simplicity, the muscles to be considered may be said to form a complete ring of fibres, comprising those muscles of the mouth which run in a horizontal direction, the muscles of the cheeks, and, in completion, those muscle fibres which run around the back of the upper part of the throat. These muscles are fixed by lines of attachment to the jaw bones and to a fibrous band known as the pterygo-mandibular ligament. The ligament originates from a small hook of bone just behind the maxillary tuberosity on each side and ends on the inner surface of the body of the mandible at its junction with the ascending ramus. Joining the ligament from behind are the fibres of the muscle which we have described as forming the back of the upper part of the throat. This is the superior constrictor muscle of the pharynx.

The front of the ligament gives origin to fibres of the buccinator muscle which constitutes the musculature of the cheek. Other fibres of the buccinator originate on the outer surfaces of the maxillæ (in the molar region) starting at

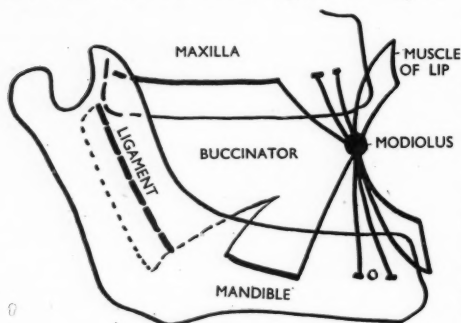


Fig. 3.—The muscle attachments.

the tuberosity, and an external oblique line on each side on the body of the mandible. The fibres pass forward towards the corners of the mouth, where the upper and lower fibres cross over each other to become continuous with the fibres of muscle encircling the mouth. The

The bony palate is continuous behind with the muscular soft palate which completes the roof of the mouth.

The floor of the mouth is made up by the mylohyoid muscle, which arises from a line running around the inside surface of the body of the mandible, and by muscles of the tongue.

These structures then, together with glands, blood-vessels, and nerves, covered by fat or fibrous tissue, and a smooth outer covering, the mucous membrane, form the oral cavity walls.

The mucous membrane is most firmly attached over the prominent alveolar ridges and over the midline of the palate. In the anterior part of the palate, on each side of the midline, the soft tissue is thrown up into a number of corrugations, the rugæ. At the anterior end of the midline is a small rounded prominence, the incisive papilla. In the mandible, the mucous membrane is again least mobile at the crest of the alveolar ridge. At the termination of the lower ridge, on each side, where it meets the anterior border of the ascending ramus, is a small triangular pad of tissue termed the retromolar pad. The very loosely attached mucous membrane, passing

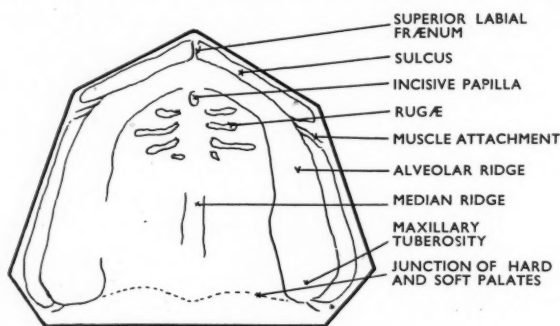


Fig. 4.—The upper model.

point of crossing of the fibres may be felt at the corners of the mouth with finger and thumb, by placing one inside and one outside the mouth.

This rather firm thickening, termed the modiolus, is the meeting place of other muscles, muscles of facial expression, and is extremely mobile. (Fig. 3.)

from the ridges to the cheeks and lips, forms the upper and lower sulcus. The sulci, trough-like in form, are broken up anteriorly, in the midline, by two folds of mucous membrane crossing from the ridges to the upper and lower lips. These are the upper and lower labial fræna. Further folds in the canine and first premolar regions on each side, sometimes called

accessory fræna, mark the attachment of muscles passing into the modiolus. A further frænium, again in the midline, passes from the under-surface of the tongue to the inner surface of the lower alveolar ridge. On each side of this frænium on the floor of the mouth is a small sublingual fold associated with salivary glands. Occasionally the attachments of the fræna and muscle-fibres are found to be at the crest of the alveolar ridge.

The denture must show stability and retention, at rest and during mastication and speech.

Stability is obtained by correct occlusal relationship of the teeth in all positions of the mandible, by minimizing the leverage which opposing dentures can exert on each other, and by shaping the denture so that it is not resting on or obstructing freely movable tissues.

Important factors giving retention in the mouth are: atmospheric pressure, adhesion, muscular action, and perhaps gravity in the lower. The action of the atmospheric pressure, often called suction, depends on a good fitting surface so that no air is present underneath, and on a good seal around the borders to prevent entry of air. Adhesion depends on the quantity and consistency of the saliva, but also on the closeness of the fit of the denture

For the purpose of description, Dr. W. E. Fish divides the surfaces of a full denture into the impression surface, the polished surface, and the occlusal surface, applying the principle that "every part of every surface of a denture be modelled to fit some part of the patient's tissue or the opposing denture". Only the first two surfaces will be discussed here.

The impression surface is that surface of the denture which is obtained from the impression. It may be divided into four areas. The surfaces of the upper and lower ridges are the primary stress-bearing areas. The secondary stress-bearing areas are the sides of the palate and the sulcus in the upper, and the buccal sulcus and floor of the mouth in the lower. Where the lower ridge is flabby, or not present at all, the sulcus and floor of the mouth take over the stress-bearing function almost entirely. The relief area is the hard area over the midline in the upper. Often relief is also required on the buccal side of the posterior part of the lower ridge. Relief is obtained by tin-foiling the areas on the model or, more accurately, by taking compression composition impressions. The fourth area of the impression surface is the area of valve seal. It follows the periphery of the dentures.

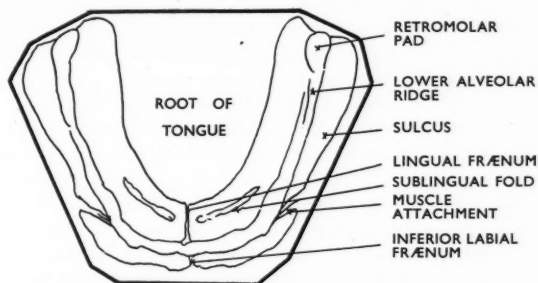


Fig. 5.—The lower model.

and evenness of pressure on its impression surface. A denture which is not relieved over the hardest areas in the mouth will not show good adhesion. The use of the muscles in retention of dentures is often overlooked and will be mentioned again. It is probably more important in the lower, where it may be the only source of retention.

In the upper denture the border is kept just free of the muscle attachments in the sulcus, avoiding the superior labial frænium, the muscle attachments in the first premolar region, and the line of origin of the buccinator muscle on the maxillary bone. The border of the denture then passes round the tuberosity, avoiding small slips of the buccinator originating there,

and follows the junction of the hard and soft palates across to the tuberosity of the other side. The posterior border of the upper denture is made to press into the soft palate by means of the post dam to ensure a seal throughout the movements of the soft palate. In the lower denture the border again just avoids the labial frænum and movable muscle attachments labially and buccally. The border then crosses

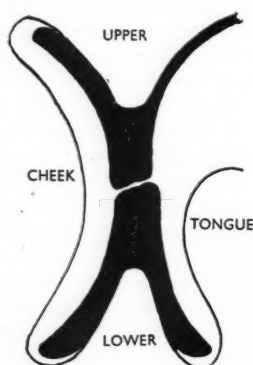


Fig. 6.—Shape of polished surface.

to the lingual side across the posterior part of the retromolar pad. The extent of the lingual part of the denture is shown by the level of the floor of the mouth when the tongue is protruded, so that muscle attachments are cleared and the lingual frænum is free to move.

The polished surface of the denture is that part which receives a high polish at the lathe. It is modelled to avoid interference with muscular movements which would tend to dislodge the denture, and to make use of the natural movements of the tongue, lips, and cheeks for retention. The modelling of the denture base itself is combined with correct positioning of the teeth at a point where the opposing pressures of the tongue, cheeks, and lips balance. For instance, anterior teeth, if too far forward, will tend to cause displacement of the denture by pressure of the lips. Placing the lower anteriors too far in will cause displacement by the tongue. In the premolar region the lower first premolar must be set well in to prevent interference with the muscles entering the modiolus from below. The upper

first premolar, however, if a little outside the ridge, will tend to be supported by upward pressure of the modiolus. The position of the teeth is also governed by the leverage of the opposing teeth in mastication, by factors required for speech, and to some extent by appearance, so that an optimum position has to be arrived at. (Fig. 6.)

In modelling the base itself the important muscles are, perhaps, best considered individually. In the first premolar region, the dentures, both upper and lower, must not be built out buccally, so avoiding displacement by the muscles of facial expression which pass into the modiolus. The buccinator muscle is used, in mastication, to prevent food from accumulating in the space between the teeth and the cheeks. To utilize the pressure of this muscle for retention, the dentures are shaped so that in the molar region the buccal surface of the upper denture faces downwards and outwards, and the buccal surface of the lower denture upwards and outwards. The buccal surface of the upper second molar is stoned away so that it cannot be gripped and the denture displaced by the buccinator. Finally the tongue musculature is used mainly in retention of the lower denture. The posterior lingual part of the lower denture is curved in slightly towards the tongue in the form of a rest. This posterior lingual rest must not be large enough to cause displacement of the denture when the tongue is protruded. Anteriorly, the lingual part of the denture is carried a short way on to the floor of the mouth with the tongue in protrusion. This anterior lingual plane must free the lingual frænum and the sublingual folds on each side of it.

It is hoped that this short outline of principles underlying full denture construction will help the technician to remember and observe facts which may supplement his craftsmanship.

BIBLIOGRAPHY

- ANTHONY, L. P. (1942), *The American Text-Book of Prosthetic Dentistry*. 7th ed. Kimpton.
 FISH, E. W. (1948), *Principles of Full Denture Prosthesis*. 4th ed. Staples.
 CRADDOCK, F. W. (1951), *Prosthetic Dentistry*. Kimpton.
 BRASH, J. C. (1951), *Cunningham's Manual of Practical Anatomy*. 11th ed. Oxford Univ. Press.

A COMPACT LABORATORY GRINDING UNIT

By E. A. SCHOOLDEN

Part-time Lecturer in Dental Technology, Newton Heath Technical College, Manchester

THE following description is of a simply and cheaply made grinder. It has intrigued many visitors to the laboratory, and evoked much interest in its construction. The photograph (Fig. 1) shows the general layout.

The whole unit was built largely from scrap. Motive power is supplied by a $\frac{1}{4}$ B.H.P. single-speed induction motor of the squirrel-cage type, which was purchased second-hand from a disposal stores for £6. Whilst so much power is not of course actually required for dental

electro-mechanical aids were mere dreams, although a possible pulpitis from thermal shock was less probable.

To support the short stem carrying the pulley-bearing, a brass holder was made to the dimensions shown in the sketch, Fig. 2.



Fig. 1.—General layout of grinder unit.

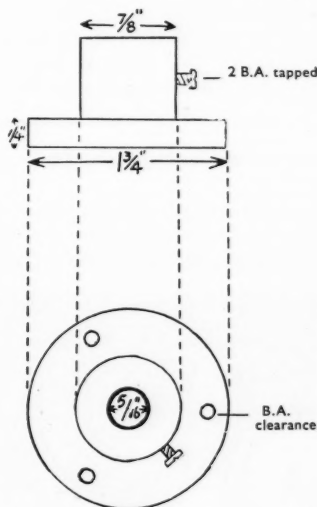


Fig. 2.—Constructional details of flexible-arm holder.

work, the fact that it is available prevents any possibility of overloading and avoids any undue heating-up.

R.P.M. is perhaps rather low at 1435 (spindle speed), but one finds from experience that the average dental handpiece is unsuited to very fast speeds. With the exception of stainless-steel work, the speed is sufficient for everyday laboratory grinding such as the fitting of teeth, the finishing of organic-base denture materials, gold inlays, and crowns.

The flexible arm carrying power to a No. 7 straight handpiece has seen many years of hard work. It was taken off an old student's foot-engine which did yeoman service in the operative department of the old Dental Hospital, Manchester, in the days when

This support is bolted to a flat plate of $\frac{1}{8}$ -in. sheet brass. The plate also is bolted to the motor mounting lugs. The flexible-arm pulley is driven by a short belt from the armature spindle three-speed pulley. This pulley is machined from solid brass, as is the stone-chuck holder. The last-named item is needed to reduce the motor spindle which is $\frac{5}{8}$ -in. in diameter down to $\frac{3}{8}$ -in. diameter, the standard dental chuck fitting size.

To reduce noise to the absolute minimum, the motor is mounted on a 1-in. thick foam-rubber pad which was bought locally as a kneeling-mat for half-a-crown. The whole assembly is mounted on an upturned wooden seed-box supplied without cost from the local grocer. Rubber feet screwed to the edges of

the box raise it slightly from the bench surface and so minimize any possible resonance. The front panel was removed and refixed in a sloping position after being drilled to accommodate various sizes of stones, disks, burs, acrylic finishing burs, etc. A very handy and useful holder is thus provided and the bench is kept tidy, ensuring that there are no rolling stones to gather any dross.

The dust-collecting box beneath the 2½-in. diameter abrasive wheel is constructed from one of the plywood cartons in which the bottles of Kallodont Plaster Coating Solution are packed. One side of the carton was removed and fixed to one end. When the box

is placed open side upwards it forms a very convenient trough, again without cost.

The starting switch is of the push-on-push-off type, mounted in a box suitably modified, which once contained a Melotte Moulding Outfit. It can be seen fitted to the bench face just below the front panel.

The whole apparatus, which operates very quietly, is perfectly safe both mechanically and electrically. It can be isolated from the mains by the removal of a three-pin fused plug. The machine has given many years of excellent and uneventful service and (load-shedding excepted) shows every possibility of continuing to "leave no stone unturned".

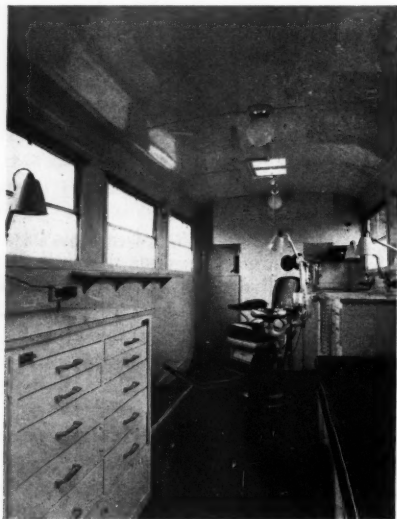
A MOBILE DENTAL UNIT IN CYPRUS

SCHOOLCHILDREN in Cyprus have not been forgotten by Britain's welfare authorities. A mobile dental unit now makes regular calls on

The latest type of chair, electric drills, and wash hand-basins have been installed. Cabinets and shelves are surfaced and edge-finished in grey linette Formica,* an easily cleaned plastic which is particularly suitable for surgeries, being very hard-wearing and permanently stain-proof.

The new unit, made by Allens of Bristol, is in the charge of Doctor Marcellos, a pioneer in school dentistry. Although the service is primarily intended for children, adults are also treated. On his first tour of Nicosia and Kyrenia villages he treated more than 200 children.

* Made by Thomas De La Rue & Co. Ltd.



Showing the interior of the mobile unit.

the island's scattered farms and villages. The unit is quite self-contained, for it carries its own hot and cold water, and a built-in generator supplies electric light and power for the dentist's drill.

NATIONAL HEALTH SERVICE

Notes have been issued on Service Committee Procedure and related matters. Information is given under the following headings: Complaints; Procedure where a hearing is dispensed with; Service Committee hearings; Action following decision of Executive Council; Withdrawal of dentists from cases.

The notes are intended to give guidance to Executive Councils and Service Committees on some points of interest or difficulty which have arisen in the determination of disputes in connexion with the provision of general medical, dental, and other services under Part IV of the National Health Service Act, 1946.

PARLIAMENTARY NEWS

THE DENTISTS' BILL

When the House of Lords considered the Dentists' Bill on report, the Leader of the Opposition (Earl Jowitt) referred to the phrase "deciduous teeth", used in one amendment, for "first teeth". He said: "Must you really use that word? Does not the word deciduous usually denote leaves, and so on, which fall every year? This is a case where a simple English word might do".

The Earl of Onslow said he had been informed that this was really the right word for this occasion. "Perhaps these teeth fall every year in various children", he suggested.

The amendments, which were largely consequential and drafting, were dealt with formally, and the Report Stage was concluded.

When the Dentists' Bill was brought forward in the House of Lords for its third reading, Lord Webb-Johnson asked for some assurance that the Bill safeguarded the interests of those Jewish refugees affected by it. "There is still considerable uneasiness amongst these refugees lest their possibility of reaching the Dentists Register has been properly safeguarded", he explained. "All that I am asking for is that the matter should be carefully considered, and that those in charge of the Bill should be satisfied that the aspirations of these people, who have been so hardly treated in the past, are receiving sympathetic consideration."

Lord Webb-Johnson explained that this particular matter had been raised by Earl Jowitt on an earlier stage of the Bill.

Lord Nathan, who led for the Opposition during debates on the Bill, told the House he had been in association with the Dental Board on this matter. "I think that the changes that have been made in the Bill should go far—even if they do not go the whole way—to meet the views of the Board", he said. "I am sure I am expressing their views if I voice appreciation of the manner in which the Government have accepted suggestions made and now incorporated in the Bill."

Earl Jowitt referred again to the question of refugees. "I received a letter from someone in this country who was a practising dentist in Czechoslovakia", he said. "When Hitler overran the country, he, being a Jew, was fortunate enough to be able to come over here. He is, as far as I know, a perfectly competent and highly trained dentist, and it is obviously desirable, owing to the shortage of dentists, that people of that sort, properly trained and qualified, should be able to practise dentistry. He explained that he found some difficulty in getting on to the Dentists Register, though he was able to get on the Medical Register."

Earl Jowitt asked Lord Woolton to see that, if this particular point was not covered by the Bill, it would be righted when the Bill went through the House of Commons.

The Lord President of the Council (Lord Woolton) said the Government had received the letter referred to by Earl Jowitt.

"The gentleman concerned has been written to", he said. "We have had no further communication from him."

"My opinion, which I express with much hesitation, as this is a legal matter, is that we have already covered this point."

"I have no hesitation in giving the assurance to the House that the matter will be considered afresh. If it

is necessary to do anything to meet these very few exceptional and unfortunate cases, I am sure the Minister will be very glad to do what he can in the House of Commons to meet them."

The Bill was read a third time and passed. (W., March 19.)

NATIONAL HEALTH SERVICE BILL

Mr. Harry Crookshank (Minister of Health) moving the second reading of the National Health Service Bill in the House of Commons, explained that Clause 2 of the Bill, dealing with the dental charges, provided for a charge of £1 or less for the actual fee for dental treatment, though it set a maximum possible charge, where dentures were provided, of £4 5s.

The estimated saving was of the order of £7,500,000. "In the Bill", he said, "we suggest two exemptions—schoolchildren, and mothers who are either expectant or who have borne a child within twelve months—who should have completely free treatment. All that those persons would have to do would be, when they go to the dentist, to sign a declaration and satisfy him of their identity." There was no question of any doctor's certificate or any other documents. "We trust entirely to their honesty", he said. But in the case of persons who made false statements in order to obtain benefit, Clause 5 provided for prosecution.

"These proposals", he went on, "have led to a great deal of argument as to whether we have taken the right place to put the exemption age; whether, instead of school-leaving age, it should not be, from the point of view of the future dental health of the nation, better to continue the exemption up to twenty-one."

They had also in mind the fact that whereas men called up for National Service got free treatment it was rather unfair that young women should not get the same advantage. "If we were to do anything of this sort we would naturally reduce the amount we hope to recover by these charges—a reduction of about a million pounds", he said. "But money is not the sole criterion."

"After further examining this, the Government are prepared to accept the suggestion of raising that exemption age from the school-leaving one to 21—under this clause." There was no reason why, if dentures were provided, they should not pay the normal charges.

He admitted that the £1 charge was rather a "rough and ready" way of dealing with this, but the Government wanted to keep the free treatment more or less to the priority classes—young people under 21, expectant and nursing mothers.

It was a sad result of the recent system that the School Dental Service had gone rather into a decline. "We hope these changes may encourage a drift of more dentists to enter into contracts with local authorities to work in this Service, possibly on a part-time salary basis. If that happened it would be, in the long run, very much to the advantage of the health of the nation", he said.

It had been argued that the £1 charge would reduce real conservation work. He was not fully persuaded of this.

"I really think that to describe this as 'rotting the miners' teeth', as Mr. Bevan did, is the wildest of exaggerations. I know he is always assumed to be the only person who ever knows what he is talking about, but I claim that this was an exaggeration", he said.

There was a case to be made that it would be a good idea that under the Act all examination should be free.

He thought that if the Government permitted free clinical examination they would keep within the four corners of the principles of the Act.

"Insofar as that was a mistake perhaps in judgement when we first made these proposals, I am prepared to say so—and on behalf of the Government move the necessary amendment so that this can be put into the Bill." (Government cheers.)

He added that in Clause 4 it was made clear that a bridge came within the scope of a charge for dentures.

Mr. Crookshank said: "There have been criticisms about the dental scheme that we were retarding the much-desired improvement in dental health, but we think that by the re-arrangement made in the Bill and which I mentioned to-day, this will be altered in the future.

"The real trouble there is that we have only 10,000 dentists. If we had more than that, things would be easier and the teeth of the nation would be better. To try to do as much as we can seems to be the answer."

Mr. J. Baird (Lab., Wolverhampton, N.E.): "If the dentists are shifted from the School Dental Service they will have to be paid. How will it save £25,000,000?"

Mr. Crookshank: "I think it will work out."

Dr. Edith Summerskill (Lab., Fulham, W.) said that it was now proposed to charge up to £1 for dental treatment, but the better-off people would certainly not be affected by the charge.

The most serious consequence would be that people who had hitherto, during the last year or so, gone for regular inspection would cease to do so. They would have second thoughts when they realized that it would cost them £1.

She added: "I wonder if the Minister has considered that it will pay them in terms of hard cash to delay treatment, for while three fillings done on three different occasions will cost £3, three arising out of one examination will only cost £1. In fact, the Minister has put a premium on neglect."

Mr. I. N. Macleod (C., Enfield, W.) said that everything in the Dental Service stemmed from the failure to obey what Mr. Bevan had said in the first place, on the second reading of the National Health Service Act. "From that the cuts in remuneration came, the School Dental Service reduction—an honoured profession has become a music-hall joke—from that came the 1951 Act and the 1952 Bill", he said.

"Why was it that Mr. Bevan failed to carry out the undertaking he gave to this House on the Dental Services on the second reading of that Bill?"

Mr. Bevan: "It was discovered that in point of fact the dentists were leaving the School Dental Service not merely on account of the National Health Service at all."

Mr. Macleod went on to say that in 1939 there were 866 dentists in the School Dental Service. At the end of 1947, before the pull of the National Health Service, the figure was 1060. "It is from that figure, down to 810 that we have now, that is the measure of his failure to carry out his guarantee."

After further exchanges, Mr. Bevan said Mr. Macleod was assuming all the time that the children who were formerly treated by the school dental officers were not dealt with now. Very large numbers were dealt with in the Health Service.

Mr. John Baird (Lab., Wolverhampton, N.E.) intervened to say that the School Dental Service was always

the "Cinderella" of the profession. A large number of the children to-day were being treated by the ordinary dentist, he said.

"We have had a Health Service under Mr. Bevan's care in which we paid more in gross income to 10,000 dentists than we did to 20,000 general practitioners", said Mr. Macleod. "At this moment expenditure on drugs in this country is £11,000,000 more than the amount paid to the general practitioners. Now we have a chance to get the scheme back into balance."

Mr. H. MacNeil (Lab., Greenock) congratulated the Minister on having partially returned to sanity in returning the age for free dental treatment from 16 to 21.

It seemed a little odd to move patients up through 21 years; to create good dental health and to train them in good habits and then at 21 to take the risk of destroying those habits and that health.

He asked if the Bill could be amended to take an extra group in each year so that the age would increase to 22 next year, 23 the following year, and so on.

Captain J. Baird (Lab., Wolverhampton, N.E.), a practising dental surgeon, said the health charges proposals attacked the very fundamentals of a free health service. The arguments put forward by the Government for these charges were not arguments at all, but excuses. "Government members have always hated the Health Act as the most socialistic measure we have carried out", he said.

It had been suggested that the charges would help build up the School Dental Service. He commented: "I have never heard a more phoney argument."

The School Service was always the Cinderella of the Dental Service. Dentists in it worked often without even running water. There were never enough dentists in it to do the job. "It was always inefficient. To argue that we destroyed that Service is simply ridiculous. I submit that in the free Health Service, as we know it to-day, children are getting better treatment than ever before."

Dentists in this Service, dependent as they were on finances from local authorities, were always hard up, and were always running what was basically an inefficient service. "This talk about the School Dental Service being neglected is political eyewash."

If dentists were transferred now to the School Service, they still had to be paid. "But you pay your dentist less in the School Service than they receive in private practice."

He referred next to the Conservative argument that the charges to be imposed would stop abuses, particularly in the Dental Service. "I have always heard the Tories talk about abuses in the Service", he said. "Who would ever go to a dentist to have teeth out or filled simply because they got it for nothing? It is a ridiculous argument. The charges for the Dental Service are, in my opinion, stupid."

The suggestion that the dental patient should pay a £1 fee was putting the clock right back. "We in the dental profession have for many years now been educating the people to come every six months to the dentist to have their teeth inspected so that we could catch disease at an early stage. You could not have a sillier way than this of inflicting a charge. This is going to be a charge on the sensible patient."

Before the war, he said, there were two types of dentistry in this country: for the middle and upper classes there was "Conservative dentistry". They had their teeth filled regularly and preserved their own teeth.

"For the ordinary mass of the working people, they could not afford 7s. 6d. or 10s. 6d. for a filling each time. They had another type of dentistry—called 'blood and vulcanite dentistry'. They waited for their teeth to have to come out and then had vulcanite dentures", he said.

The reason why there was a shortage of dentists to-day was the bigger demand for dentistry. The standard had been raised. "Now you come along with this silly and criminal method of charge, penalising the sensible people who realize the value of preserving their teeth", he said.

Under the new system of emergency treatment the dentist would be able to charge anything he liked. There would be no public control over that treatment at all. When anyone was suffering from pain, he said, they were very easy to blackmail. By imposing the charges they were putting the clock back to 1910.

Suggesting ways in which there could be savings, he said that more inspection of dentists' work would control the "spiv dentists". He believed that orthodontic treatment was being carried out under the Health Service by a large number of dentists who had not the experience. It should be done in hospitals under proper control.

He suggested imposing a "ceiling" on the amount of money paid for treatment. There had been estimates recently of £200 in one case and £100 in another for one person's treatment over six months, he said.

"If the Minister had really consulted the dental profession we could have put forward many other ways of saving, without this attack. I, in this House, have attacked the dental profession on many occasions. But I do say this: it is time the dental profession was left alone for a little while. This is about the fourth change in their remuneration in the last five years. They are trying to settle down and do a decent job.

"I warn the Government: If you start with this attack on a Welfare State you are going to create industrial strife in this country. We shall fight you next week, and the next, and at the first opportunity will remove the charges you are imposing, and, I hope, the charges we imposed last year", he concluded.

Dr. B. Stross (Lab., Stoke-on-Trent, C.) said the Government's proposed charges on the Health Service would not prevent abuse, but would lessen demand. For instance, the demand for dentures had fallen by half since charges were imposed. To-day 1000 dental mechanics were out of work.

"This Bill", he went on, "is mean, it is brutal, and it is stupid."

Mr. Hilary Marquand (Lab., Middlesbrough, E.), formerly Minister of Health, moved the rejection of the Bill at the commencement of his winding-up speech.

Referring specifically to the Dental Service charges proposed, he said: "I cannot imagine how the Minister thought of these charges at all. No one has found anything to say in favour of them."

The Bill was read a second time. (*Th.*, March 27.)

STRENGTHENING THE SCHOOL DENTAL SERVICE

Speaking in the education debate in the House of Commons on Tuesday, March 25, Miss Florence Horsbrugh (Minister of Education) said:—

"I am entirely in favour of strengthening the Dental Service, and, in the last debate in which I spoke, from the other side of the House last July, I said I was horrified that we had not provided a comprehensive service, that the recommendations of the Teviot Report

were set aside, and that we started in 1948 with a free Dental Service for all.

"If hon. Members will look at that Report and the White Papers they will find that it was known that there were not enough dentists in the country to give that free treatment for all, and it was decided that children should be given priority. This is only common sense. If children's teeth are properly looked after we shall have a generation coming along with much better teeth than the present one, and it will mean not only that much ill-health and pain has been saved, but that a waste of money in fitting dentures has also been avoided.

"Since 1948 the number of dentists working in schools has been falling. In 1948 there were 921 full-time dentists; in 1950, there were only 736; and in 1951, at the beginning of the year, there were 711, and the figures were still falling.

"A Whitley Council has been set up, and I have great hopes of a new scheme which will really help to build up the Dental Service again. It is too early yet to judge, although I am encouraged to note that one authority has just engaged two extra full-time dentists.

"I know it has been said that cuts have been made in some estimates. Local authorities have been putting into their estimates sums for dentists whom they were trying to get, but failed to get. They have been advertising for dentists, but have found that they could not get them.

"When they found that they could not get the dentists, some of them took out these extra sums, but, if we can get the dentists, they will be employed, and the estimates can be re-arranged in the autumn. I assure the House that I shall do everything I possibly can to build up this Service, and to help local authorities to do it."

Mr. Angus Maude (U., Ealing, S.), speaking of the School Dental Service, said he had never had any doubt that, in order to divert more dentists into the School Dental Service it would be necessary in present conditions to impose some considerable deterrent to practise in the other parts of the dental profession. He was hopeful that the provisions of the National Health Service Bill would have that effect. Nevertheless, he said, there were very great difficulties in recruiting dentists for the School Dental Service.

"In my opinion there has been far too much insistence as a matter of deliberate policy in the past, on the employment of full-time dentists in that Service. It has been generally considered that we must have a dentist who devotes himself or herself entirely to the care of children's teeth. I believe that this is the wrong approach. It is obviously not easy to get children to open their mouths at the right time and to keep them open, or do all the things which make up the co-operation which the dentist requires from child patients.

"Nevertheless there are also a great many dentists who would refuse to go into a Service which meant that they did nothing else except care for children's teeth. Yet a great many dentists would be only too delighted, if given the chance to spend, say, two full days or two half days in School Dental Service every week."

He thought they should be given the opportunity to do that and that the policy should be changed to make it easier. That would staff up the School Dental Service in a much shorter period than they could now believe possible.

CRITICS' CORNER

(Under this heading we print letters which discuss points arising from articles which have appeared in the DENTAL PRACTITIONER, together with the comments of the authors when necessary. We trust that this section will prove of interest to all our readers and stimulate further discussion.)

The Third Dentition

March 12, 1952.

To the Editor.

Dear Sir,

With regard to Dr. Coxon's note on a woman aged 54 with 22 or more unerupted teeth, ("The Third Dentition", DENTAL PRACTITIONER, March, p. 206), it would be of interest to know if he had considered whether this was a case of cleidocranial dysostosis. A characteristic of this disease, the cause of which is unknown, is the imperfect ossification of the membrane bones of the skull and clavicles. The clavicles are only partly developed, and the patient can bring his shoulders forward to an abnormal extent, and may be able to make them touch in front of his body.

I reported a case of cleidocranial dysostosis with more than twenty unerupted teeth in 1942 (*Brit. Dent. J.*, 73, 119). Like Dr. Coxon, I did not see that any useful purpose could be served by extracting these teeth, and after extracting the few erupted teeth present, I made full upper and lower dentures for him. A few years later the patient had had only one tooth (an upper incisor) erupt. This had been extracted and he was still quite comfortable with his original full upper and lower dentures which I had made for him.

Yours faithfully,

WALTER C. ALLWRIGHT.

Dundee Dental Hospital.

Cobalt Chrome Alloys

April 15, 1952

To the Editor.

Dear Sir,

After reading the excellent article on casting a new chrome-cobalt-molybdenum denture base alloy by J. R. Boswell, F.I.B.S.T. (DENTAL PRACTITIONER, February, p. 180), I am loath to contribute to Critic's Corner, but, whilst being full of praise for his new material and technique, which I believe has a great future in dentistry, I cannot quite agree with his final remark in which he affirms the alloy to be *austenitic*.

What I believe he means is that the alloy is affected somewhat by strain-hardening. Although carbon is given as a constituent, the reader is led to believe that the alloy is non-ferrous, whereas austenite is metallographically a solid-solution of iron carbide (cementite Fe_3C) in gamma iron (see Skinner, E. W., *The Science of Dental Materials*). Such an alloy is described as a eutectoid steel and possesses the property of strain-hardening by cold working to a high degree, whilst conversely martensitic steel requires a specific heat treatment.

Possibly what the term is meant to convey is that the new alloy behaves in a somewhat similar manner to austenitic stainless steels as used for wrought denture bases?

Yours faithfully,

E. A. SCHOOLDEN.

40, Norfolk Street,
Glossop.

ABSTRACTS from Other Journals

Chrome Alloy in Orthodontics

An account of the development of stainless steel in industry and in orthodontics is given. The term "chrome alloy" is used to describe an 18-8 stabilized chrome nickel steel as standardized by the American Iron and Steel Institute. Chrome alloy may be used for any type of appliance in orthodontics to-day. Anterior and posterior attachments are limited only by the ingenuity of the technician. There are, at the present time, some fifteen to twenty various types of anterior attachments available on the market, and twelve to fifteen methods of posterior attachments. Although the high tensile strength is a retardant to breakage in the mouth, it increases the possibility of fracture in fabrication, especially at the point of sharp bends. This is easily avoided by making these bends slowly. A piece of high-tensile stainless steel wire bent at a 90° angle is much

more likely to fracture if bent quickly than if it is bent slowly.

Sharp bends of more than 90° require that the area of the bend be heated to a dark red before completing the bend past the 90° point.

Welded joints can be likened to riveted joints. While one weld can be very easily twisted off, a series of welds, properly placed, are almost impossible to break loose. This explains why two wires should not be welded together without adding some form of mechanical retention such as wrapping or soldering. Bands are constructed by using a simple welded lap joint. The attachment of all brackets and tubes is facilitated by flanges which extend from them in such a manner that welding is easily accomplished.

The strength of a soldered joint with chrome alloy is entirely dependent upon strictly mechanical adaption of the solder to the

chrome alloy, so flat pieces and butted-wires do not lend themselves to strong joints. The flux should be of the bifluoride type and should be applied generously. Low fusing solders discolour in the mouth and a gold solder of 0.490 fineness and 1330° F. fusion point is recommended. A very small flame about the size of a round toothpick 1 in. long should be used. It is wise to use a solder in the thinnest possible wire form. It is recommended that wires to be soldered first be tack-welded with one weld.

In constructing an appliance the lingual arch and posts may be made from one piece of wire and a technique is described. The annealing points of the welder are used to remove any tension remaining in the arch.

Appliances may be polished, or wires reduced in size, by an electrolytic process using an aqueous solution of phosphoric acid and polyethylene glycol.—GASTON, NATHAN G. (1951), *Amer. J. Orthodont.*, **37**, 779.

BOOK REVIEW

THE PHYSIOLOGICAL FOUNDATION OF DENTAL PRACTICE. By L. L. LANGLEY, M.A., Ph.D., and E. CHERASKIN, M.A., M.D., University of Alabama School of Dentistry. $6\frac{3}{4} \times 9\frac{3}{4}$ in. Pp. 511, with 149 illustrations. 1951. London: Henry Kimpton. 60s.

In their preface the authors draw attention to the inadequacy of the teaching of physiology to dental students in the United States, and rightly say that the course must be neither identical with the medical course, nor simply an abridged medical course. Their text-book therefore sets out to present physiology in a manner especially suited for the dental student, illustrating physiological principles as far as possible with examples from the mouth or head and neck.

From a country whose people are reputed to be enlightened in their attitude to dentistry, the opening chapter comes as a shock, for the nervous system is dealt with first on the grounds that pain is the most common symptom which patients present to the dental practitioner.

The treatment of the nervous system, like the rest of the body, reaches most advanced levels without adequate foundations, and it is hard to see how the student opening this book as his first introduction to physiology is to establish himself on a firm basis. The scope is too wide; for example in Chapter VII the reader is introduced to hemiballismus,

a condition which many doctors would be unable to describe. In Chapter XXV, renin, hypertensin, and the question of hypertension are dealt with in considerable detail. Page 470 is devoted to the structural formulae of corticosteroids and sex hormones, from which the student can learn little except that they are similar—a fact that could have been stated in a few lines.

The illustrations are in general rather poor; some are bad. For example, Fig. 6 claims to illustrate the physiological principles of nerve-block, but can add nothing to the average person's experience of local anaesthesia; Fig. 129 has been redrawn from another source and is incorrect.

This book cannot be recommended to dental students on the threshold of their studies, although it may be of interest to established dental practitioners who can be expected to understand such terms as "malocclusion" and such phrases as "dominant mastication on the contralateral arch" (p. 28). The book is not condemned for its brevity as the authors forecast in their preface, but for its wide scope which makes it scrappy. It is set out well, and printed on good paper. The chapter summaries will appeal to the hard-pressed student, but it cannot hope to take the place of the books at present used by the dental student in spite of the fact that they have not been written especially for him.

D. J. A.

THE PROCEEDINGS OF THE BRITISH SOCIETY OF PERIODONTOLOGY

President: G. H. LEATHERMAN, F.D.S. R.C.S. Eng.

Hon. Secretary: H. THOMSON, L.D.S. R.F.P.S. Glas., H.D.D. R.C.S. Edin.
53, Portland Place, London, W.1.

Vol. II, No. 4

May, 1952

STUDIES OF THE EPITHELIAL DOWNGROWTH

THE fourth meeting of the Society was held on Monday, March 3, 1952, at Guy's Hospital, and was addressed by Professor M. A. Rushton. He discussed the fact that there were two processes at the neck of the tooth which were responsible for its attachment to the surrounding tissues. These were the epithelial downgrowth and the collagen attachment and they acted, as it were, in competition with each other.

Discussing the rate of downgrowth of epithelium over the cementum of the tooth, Professor Rushton said that while local factors were of the greatest importance their effects were modified by endogenous general factors. He reviewed opinions as to the way in which such general factors might act and concluded that they might do so through affecting the epithelium on the one hand or the capacity to produce and maintain collagenous structures on the other. In relation to the latter he spoke of the effects of scurvy, protein starvation, adrenal gluco-corticoids, and age on the epithelial downgrowth so far as these were yet known, and described his own recent experimental work on golden hamsters.

Mr. Cross, opening the discussion, said that Professor Rushton's paper was an important contribution to the clinical periodontist and that great value was attached to the fact that four factors were presented for consideration which might endogenously affect the periodontal tissues. Mr. Wade asked if measurements could be made from the occlusal surface of the teeth to the attachment so as to assess the effect of wear on the downgrowth of the epithelium. In reply Professor Rushton said that in view of the size of the teeth of the golden hamsters this was impracticable, but that it would be an interesting experiment.

Mr. Kramer questioned the value of the absence of cementoid as an early indication of disease, and also criticized the concept of an "aggressive" action of the epithelium in periodontal disorders. He felt that there was considerable evidence to support the view that the downgrowth of epithelium was largely secondary to connective tissue damage, the downgrowth being arrested when it met healthy collagen fibres. Professor Rushton agreed that cementoid might not always be demonstrable in apparently healthy teeth. He also agreed that the concept of an "aggressive" epithelium was open to serious doubt, the view having been given for the sake of completeness.

THE annual Clinical Meeting of the Society was held on Friday, April 4, 1952, at the Eastman Dental Hospital. The programme was as follows:—

Clinical Demonstrations: Surgical gingivectomy, Basil W. Pett, B.D.S.; Scaling and packing, George A. Cuthbertson, L.D.S., D.D.S.

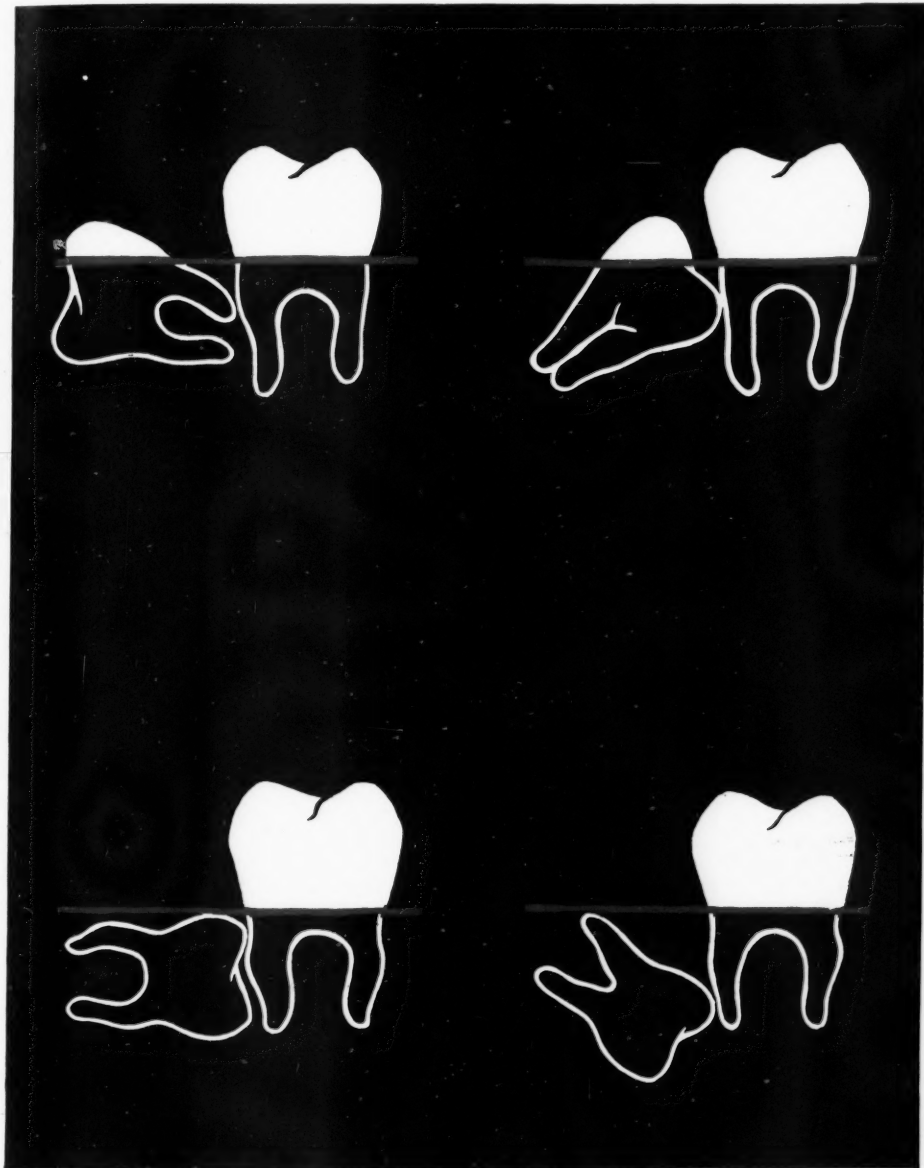
Clinical Presentation: The training of the dental hygienist, H. G. Poyton, F.D.S., H.D.D.

Table Demonstrations: Pathological investigations in the differential diagnosis of ulcerations of the mouth, I. R. H. Kramer, L.D.S.; Occlusion in relation to periodontal health, R. D. Emslie, F.D.S., M.S.; Etiological factors in periodontal disease, E. C. Fox, M.D., L.D.S.; Paraffin packing, G. A. Christensen, F.D.S., D.D.S.; Some X-ray findings following the conservative treatment of deep periodontal pockets, A. Rosentrauch, D.M.D.; Tooth resorption, A. Bryan Wade, F.D.S., B.Ch.D.; Periodontal splints, R. J. G. Grewock, L.D.S.

Film: The periodontal flap operation, W. G. Cross, M.S., B.D.S.

COLOURED CHART No. 11. (FOR YOUR PATIENT'S INSTRUCTION)

THE IMPACTED WISDOM TOOTH



Any tooth in the jaw may remain impacted against the adjoining tooth or bone and therefore will not be able to erupt. This picture shows diagrammatically one of the commonest impacted teeth—namely, the third lower molar or wisdom tooth. The radiographic examination will reveal the degree of impaction and such a condition can only be rectified by surgical procedure.

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OFFICIAL SUPPLEMENT OF THE
**SURGICAL INSTRUMENT MANUFACTURERS'
ASSOCIATION (INC.)**

DENTAL LABORATORIES SECTION

Chairman : E. G. EMMETT, F.I.B.S.T.

Administrative Offices : 6, HOLBORN VIADUCT, LONDON, E.C.1

Telephone : CITY 6031

Vol. II, No. 2

May, 1952

Editorial Committee: MR. D. M. BEAUCHAMP; MR. H. J. POTTER, F.I.B.S.T.

EDITORIAL

THIS month the S.I.M.A. Supplement concerns itself almost entirely with reporting and describing the final meeting of the week-end Conference, an exhibition of dental laboratory equipment and techniques in the Council Chamber of the Holborn Restaurant.

The immediate aspects of being in the dental laboratory industry and operating a dental laboratory large or small, with all the associated problems, are suspended in this issue.

The flow of excellent technical articles contributed by members, and specialists at the invitation of members is interrupted, and branch and other news items are kept to a minimum.

We may accordingly give space and prominence to London members of the Association of Dental Manufacturers and Traders, ten of

whom presented a selection of their merchandise, the equipment and materials of special interest to laboratory men, or described new techniques, the results of their researches.

The presentations were varied, as will be noticed from the reports: while one was content to let a fine display speak for itself, another explained the interior construction and purpose of a novelty; on one side of the hall metals were being heat treated in a furnace, on the other a new method of repairing dentures was discussed and all enthusiastically gave of their best to a meeting which had been organized by our friend Mr. C. M. Booth.

Among the large roving audience of two hundred and seventy-five, were laboratory owners and technicians from places as far as Liverpool, Edinburgh, and Glasgow, and we were gratified to hear of members of the dental profession who found it worth while to attend.

NEWS FROM HEAD OFFICE

The Dentists Bill.—Every effort has been made to safeguard the interests of our members in the above Bill and as the measure has now passed through the House of Lords without any satisfactory amendment to ensure that the work of the skilled dental technician is not encroached upon, the Association has redoubled its endeavours in preparation for the debates

in the House of Commons. Members have been advised to make their M.P. cognisant of the facts and we are endeavouring, through other channels, to get Members of Parliament to sponsor a suitable amendment to Clauses 18-20. At the same time conversations have been proceeding with the other organizations represented on the National Joint Council, with

whom there is a large measure of agreement as to the undesirability of introducing a class of ancillary dental workers, such as that provided for in the Bill.

Payment for Holidays.—Attention is called to the following N.J.C. Agreement with regard to payment for holidays:—

1. In addition to six Bank or Statutory holidays per year, annual holidays shall be granted to employees during the holiday season (being the period from May 1 to Sept. 30) on the basis of one working day's holiday for each month of service within the twelve months immediately preceding May 1 in the holiday year. Where a five-day week is in operation this means two weeks.

2. An employee leaving after a period of employment in respect of which he has not received a holiday shall be entitled to the annual holidays accruing to him, or shall receive payment on the basis of one day's pay in respect of each month of service qualifying for holiday.

Supplies of Plaster.—In view of complaints of shortages of Kaffir "D" in certain areas, we have been in communication with the manufacturers and prompt deliveries have been made to suppliers who were unable to meet our members' requirements. Members having any serious difficulties are advised to contact head office.

Overseas Contacts.—Mr. Robert J. Rothstein, President of the National Association of Dental Laboratories of the U.S.A., is visiting this country in July to attend the International Dental Congress in London and we hope to arrange a meeting with Mr. Rothstein so that he may have an opportunity of becoming acquainted with British laboratory owners.

Full-time Representative.—The appointment of a full-time representative for the Dental Laboratories Section of S.I.M.A. is now under consideration and inquiries from suitable applicants, who should have a first-hand knowledge of the craft and reside in or near London, are invited.

"Dental Practitioner" Supplement.—Members who have been subscribing to the DENTAL PRACTITIONER since the publication of the S.I.M.A. Supplement in April, 1951, are reminded that their subscriptions are now due for renewal and their contributions of £1 1s. 0d. should be sent to the publishers, Messrs. John Wright & Sons, 42/44, Triangle West, Bristol, 8.

Changes of Address.—The following new addresses should be noted:—

Peake's Dental Laboratories, Peterholme, Aynhee, Nr. Banbury, Oxon.

E. W. Sharp, 43, Weymouth Street, W.1.

John White, 56, Jesmond Street, Newcastle upon Tyne, 2.

S.I.M.A. (DENTAL LABORATORIES SECTION) DIARY

London Regional Branch.—Meeting, June 5, 1952, at 6.30 p.m., at 6, Holborn Viaduct, E.C.1.

South Wales and Monmouthshire Branch (Secretary: Mr. R. Mather, F.I.B.S.T., 16, Clodien Avenue, Cardiff).—Meeting, Thursday, May 1, 1952, at the Royal Hotel, Cardiff.

West of Scotland Branch (Secretary: Mr. J. Stuart Fountain, F.I.B.S.T., 21, Circus Drive, Glasgow, E.1.).—Meeting, Monday, May 12, 1952, at the Bath Hotel, Bath Street, Glasgow.

Croydon Branch (Secretary: Mr. H. J. Nowers, F.I.B.S.T., 86, Croydon Road, 286

Beddington, Croydon).—Meeting, May 16, 1952, at 7.30 p.m., at the Six Bells, Croydon.

North-Western Branch (Secretary: Mr. C. Bradshaw, 608, Bolton Road, Pendlebury, Lancs).—Meeting, May 4, 1952, at 2 p.m., at Empire Hotel, Preston. Lecture by Mr. W. G. Kenyon on "Stainless Steel".

"Is it not strange to find this stern and strong metal mingled so delicately in our human life, that we cannot even blush without its help?"—RUSKIN.

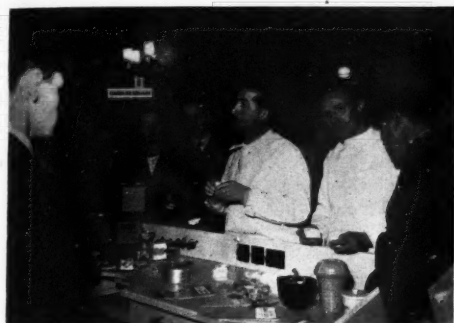
EXHIBITION OF DENTAL LABORATORY EQUIPMENT AND TECHNIQUES

The Amalgamated Dental Co. Ltd.

The Amalgamated Dental Co. Ltd. displayed a wide selection of prosthetic products, including Stellan, Stellan Veined, Stellan "C", Duplit, Calsite "3", waxes and model plasters, together with workroom tools and appliances. Also on view were articulated dentures, Stellan weighted dentures and a comprehensive range of Ash gold specimens of partial denture construction and inlays, all of interest to the technician audience.

surgery and laboratory. The acrylic partial denture would then be processed on the duplicate E.P.I. model, thus retaining the "blue print" master model for adjustment and fit before delivery to the surgery, further illustrated by a completed specimen.

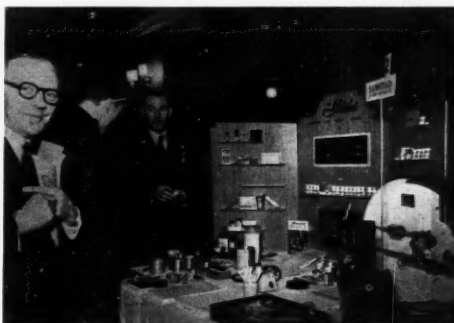
A technique for the immediate restoration was also included in the 12-minute talks. Models and specimens illustrated the method of reproducing *en bloc* two or more natural anterior teeth. This technique simplifies the



Novel use was made of the Ash Laboratory Unit Equipment by showing a sectional workbench and component infilling units complete with electrical and gas points, which served on this occasion as a demonstration table.

Two demonstrators were in attendance, alternating during the ten 12-minute sessions. Our picture shows Mr. G. Miller (left) giving a talk on partial denture design, while Mr. H. S. Maidens waits to receive the next party when the warning bell notifies each group to continue the circuit of the ten exhibitors.

The demonstration talk featured the use of Duplit duplicating material, offering a more scientific approach to acrylic partial denture work, with the object of reducing chair-side adjustment of the partial acrylic denture to the minimum. Sequence models illustrated the technique of duplicating a master model—surveyed and relieved of all undesirable undercuts—with the path of insertion agreed on by



ordinary method, which sometimes presents difficulty in certain cases with overlapping teeth worthy of accurate reproduction, and overcomes the need of separating wax tooth patterns for such cases. The subtle use of interstitial staining with Stellan "C" shades was stressed when the case called for facsimile staining, so often found with middle-aged immediate restoration patients.

At the end of the 12-minute sessions, the demonstrators dealt with individual queries relating to the techniques and specimens exhibited.

The S. S. White Co. of G.B. Ltd.

Messrs. S. S. White had a small, but most attractive display of their products, a number of which are of special interest to dental technicians.

Interest was expressed in the various techniques suggested for the use of S. S. White

Impression Paste, S. S. White Model Kryptex, and S. S. White Model Alloy.

Much interest was also shown in the S. S. White Bite Gauge, which is now being used by so many members of the profession as a guide indication of the correct height of the bite.

S. S. White also demonstrated a new chrome-cobalt-alloy "Virilium" and also had on show a full range of accessories for use with this product. From the many inquiries it was obvious that all members of S.I.M.A. are interested in this new development.



Dental Fillings Ltd.

Dental Fillings Ltd., who are at all times willing to co-operate with professional organizations in the matter of demonstrations, inform us that samples and literature of both Simplex-Pentacryl and Acrofix are available on request.

Simplex-Pentocryl.—The self-curing acrylic for prosthetic work was demonstrated.

Acrofix—a model and fixing cement was displayed, but lack of time prevented the demonstrator referring specifically to it, though the excellent models on show were most instructive.

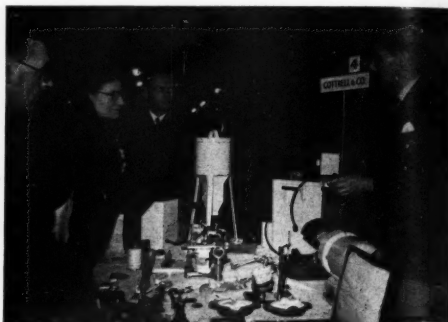
The mixing of Simplex was fully explained and with the aid of models the demonstrator gave a very clear exposition of the repair of cracked and broken dentures, the addition of teeth, clasps, and springs, and of the preparation and flasking methods advocated. In particular, their half-flasking technique would appear to be an invaluable time saver. The workshop pack of Simplex which was displayed shows a saving of 33 per cent over the laboratory pack.

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J. Seward Cottrell & Co. Ltd.

The exhibit by Cottrell & Co., demonstrated by Mr. K. Houghton, created considerable interest, the large range of items shown being of a varied nature and quite new to some members.

Outstanding amongst the equipment shown was the Cottrell Lathe with Dust Extractor, Clasp Surveyor with Magnetic Platform, Dentatus Articulator, and Nattex Copper Forming Dental Unit. The smaller items included an ingenious Tool Rack, Twin



Denture Flask, Spring Winder, Mandibites, Pumice Trough Light, and Self-articulating Model Former. Many of the goods exhibited are worth further investigation and Cottrell & Co. would be pleased to send literature on any of particular interest on application.

Baker Platinum Ltd.

The Baker display demonstrated how correct heat treatment can produce in precious metal castings physical properties unsurpassed by any base metals.

Thorough annealing, followed by a process of age-hardening, will result in castings having great strength and resilience, but having no deleterious effects on the oral tissues.

This process is by no means complicated.

A good yellow gold alloy is best annealed by holding at a temperature of 650°—700° C. ("cherry red") for 4 or 5 minutes, and then quenching. Less time can be given for very thin gauges of wire being treated by themselves. A white gold alloy, usually having a high palladium content, will stand and require

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a slightly higher temperature, 700°—750° C. ("bright cherry red"), for the same time.

Age-hardening is then carried out by holding at lower temperatures for longer periods, depending upon the nature of the alloy. In the case of Baker golds, these vary from 8 minutes at 400° C. for Chicago 4 or Q.A.



Wire, to 15 minutes at 300° C. for Baker 4, but fuller information can be obtained from the manufacturers.

Super Oralium and Pallacast require very little hardening to obtain their maximum toughness, and this is best achieved at the time of the final anneal.

C. J. Plucknett & Co. Ltd.

A comprehensive range of requisites and apparatus used by dental technicians was the feature of the display by the House of Plucknett.

Great interest was shown in the Plucknett flasks, especially the spring-loaded model which is designed to give automatic ejection of the plaster mass. The complete range of workshop files was also on display, including the hand-cut type which Plucknetts have featured for many years. The range of wire-bending pliers and cutters was extensive and examined with great interest, although the original Dr. Waldsax pliers, for which this company is the sole distributor, was not available as the line was temporarily out of stock.

A special feature was the Meisinger abrasives, both for normal and metal work; also the special cutters which are manufactured by the Meisinger Company.

Charlstone Hardstone Plaster and the Company's range of waxes were displayed and Plastacryl Denture Base Material was featured, with the stress on its economy on purchase.

In addition, a demonstration was given of the laboratory bench motors and the Richter



ball-bearing workshop handpiece, which drew many admirers from the technicians present.

Davis, Schottlander & Davis Ltd.

Lecture given by Mr. R. T. Bourgoing,
Chief Technician, Croform Techniques Ltd.

Chrome cobalt alloys have been used in the U.S.A. for over twenty years, during which time their popularity has steadily increased, with the result that removable partial appliances are once again preferred to fixed appliances.

The Croform Laboratory has been specially established both for technical development work and so that full facilities are available to technicians to familiarize themselves with the work of casting Croform Alloy and to become used to working with higher temperatures than usual and to obtain experience in melting with oxy-acetylene gas.

The Croform technique commences with the master model, which must be carefully surveyed and designed and all undesirable undercuts waxed out. The master model is now ready for duplicating, using the Croform duplicating material which is fully reversible, and has proved to have extreme accuracy.

The duplicating material is melted in an ordinary water-bath and becomes fully molten

at 90° C. While the material is melting the master model is immersed in warm water to expel any air, and when the duplicating material is ready to be poured the master model is fixed to the bottom plate of the specially designed Croform duplicating flask,



and the top of the flask is placed into position and sealed ready to receive the duplicating material, which is poured at 55° C., at which temperature the waxed undercuts will not be disturbed.

The flask is allowed 1 hour to gel, when the bottom plate may be removed and the duplicating material slightly relieved from the base of the model for ease of removal. Care must be taken to remove the model without breaking or disturbing the duplicate model.

Without any further preparation the refractory material and special binder liquid is mixed and vibrated into the mould, the effect of the vibration being to condense the material so that the duplicate model has the maximum possible strength and density.

After the model is fully set it is gently heated to 150—200° C., and dipped for a few seconds in a molten solution of Croform model hardener. Any surplus hardener is blown off the surface of the model, and when the model is cooled it will be noted to have a very hard surface, so that wax preparation can be carried out without any fear of disturbing the surface.

Croform pre-formed wax patterns, which are of even thickness, are used for bars, clasps, etc., and the range includes sufficient shapes to enable any intricate denture to be prepared simply and quickly.

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Sprueing may be either through the model or from above, as appropriate, and it is essential that the sprue lines follow curves, not sharp bends and traps, and at 2 mm. from the bar or plate surface, reservoirs should be fixed.

The duplicate model with the wax pattern is then invested in a special casting ring properly lined to permit full thermal expansion.

The investment material is then vibrated into the casting ring and it is to be noted that the same material is to be used both for the duplicate model and for full investing, the material being specially prepared and balanced.

When the investment is set, wax is eliminated in the usual way and the temperature taken slowly up to 650° C. and then raised rather more rapidly to 1100° C., at which temperature it is allowed to heat soak for a period of time, according to the type and size of denture to be cast.

The casting is by means of a centrifugal casting machine of the heavy-duty type.

The Croform alloy is melted by means of oxy-acetylene gas, using a special nozzle.

After the metal has been cast it is necessary in order to preserve the physical characteristics of the alloy, that the casting ring is put back into the furnace and allowed to cool down slowly with the furnace. This process is known as normalizing or stress relieving.

After freeing the casting from the investment material it is subjected to a process of sand blasting to remove all traces of refractory and oxides on the surface. This process gives a smooth, clean casting and considerably cuts down the finishing time.

Using a Croform High Speed Alloy Grinder, which has speeds of 10 and 20,000 r.p.m., the sprues are then cut off, and the surfaces stoned and then finally polished with rubber abrasives and felts. For this grinding and polishing process a special range of Croform Abrasives are used, and it is to be noted that the stones are both fast cutting and non-clogging.

The Physical Properties of Croform Alloy:
Tensile Strength—45 tons per sq. in.; Yield Point—40 tons per sq. in.; Elongation on 1 in.—5 per cent; Bend—90° minimum. Specific Gravity weight—8.28 (gold 14-00 to 18-00); Melting-point—1390° C.

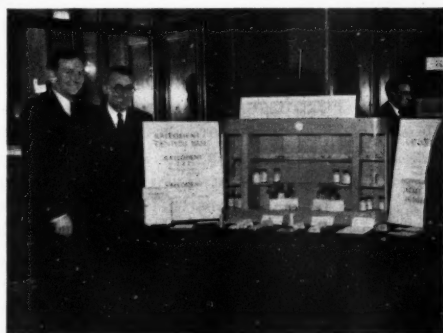
Imperial Chemical Industries Ltd.

I.C.I.'s Stand at the above exhibition illustrated the interest of the Plastics Division of I.C.I., Ltd., in the dental field. As most of our members know, this activity commenced in 1935 with the introduction of "Kallodent" denture base, and it is often instructive to be reminded of the progress which has been made since those pioneer days.

The exhibit first showed the raw materials used in the manufacture both of denture base and plastic teeth. Samples of the "pearl" grain polymer and liquid monomer, as well as the test mouldings made in the control laboratory, illustrated the purity of the basic ingredients.

Pigmented powders both for denture base and for teeth showed the variety of colours available and reference was made by the demonstrators to the fact that I.C.I. denture bases and tooth materials had found favour in many overseas countries.

Excellent examples of denture work were on show and the demonstrators devoted some time to emphasizing the important requirements for first-class results, i.e., checking the



consistency of the "dough" before packing, adequate compression, and full polymerization by boiling the denture after any "slow cure" treatment.

Plastic teeth were also discussed, and again examples both of manufactured products and the "individual" results obtainable in the laboratory were on show.

The Dental Manufacturing Co. Ltd.

The Dental Manufacturing Co. exhibited three items from their extensive range of goods, namely the Alston Vacuum Investor, The Waxing Die Kit, and New Dentacryl Personalized Teeth. These created a great deal



of interest and their demonstrator, Mr. R. T. Macpherson, explained in detail the technique of the Investing Machine and Waxing Die Kit.

The Alston Vacuum Investor.—Vacuum investing has been used for many years in engineering and in the jewellery trade, but it is comparatively new in dentistry. Usually the vacuum has been obtained by using costly apparatus incorporating an electric motor, but in the Alston vacuum investor a hydraulic pump is used which needs only an efficient water system. The advantages gained by investing in a vacuum are: (1) a mould free from air blows giving a clean casting and thus a great saving in finishing time; (2) the investment when set is of great compressive strength, ensuring a perfect fit in such castings as M.O.D. inlays.

The technique is simple and from the commencement of mixing the investment to the release of the vacuum it takes less than four minutes. The investing must be completed in four minutes otherwise the initial set of the investment will take place before the material has settled back in the ring. Water pressure at the tap must be sufficient to register 27 on the gauge in little more than one minute.

The wax pattern is sprued in the normal manner and fixed in the special crucible former

with extended sides. The sprue should be long enough to hold the pattern $\frac{1}{2}$ in. below the top of the ring. The ring and extension tube are placed in position, the latter being necessary to allow for overfilling the ring and the bubbling up of the investment as the air is drawn out. Place the stand on the base of the apparatus and the ring on the stand. The tap on the base is in the open position and the water running full on. Mix sufficient investment with the mechanical spatulator to a consistency that will allow it to be poured from the bowl. Slightly overfill the ring, place the glass cover over the ring and close the vacuum tap. The gauge will register 27 in a few seconds, when the investment will rise in the extension tube as trapped air is drawn from it. When the investment begins to settle back the vacuum tap is opened, slowly at first, and finally sharply. The stand acts as a baffle, preventing the inrushing air from disturbing the investment.

The Waxing Die Kit.—A useful article which enables the technician to produce quickly all types of clasps and bars of uniform thickness and correct taper without time-consuming hand carving. The kit consists of a mould giving various shapes and sizes of clasps, bars, etc.; a plastic trimming knife; a bottle of separating medium; a bottle of wax solvent; a bottle of acetone and sticks of special wax.

The size of clasp is selected on the preformed mould and after painting thinly with the separating medium blue wax is run in with a hot spatula. The pattern is easily removed from the mould and formed to the surveyed line on the tooth. By using the solvent, eucalyptol, and the acetone, an absolutely smooth wax surface can be obtained before investing.

New Dentaeryl Personalized Teeth.—This range of teeth is in the same moulds and body shades as Dentaeryl teeth but each one is individually characterized allowing a truly personal denture to be made for each patient. In addition they have the blue-white fluorescence of natural enamel. This was demonstrated under an ultra-violet lamp, where non-fluorescent acrylic or porcelain teeth turn

a dark purple. Under any artificial light, especially strong tube lighting, acrylic teeth tend to lose their colour and look lifeless. Even under the very strong lighting used before T.V. cameras, New Dentaeryl Personalized Teeth retain their colour and life-like appearance.

Rosen's Dental Depot

Messrs. Rosen's Dental Depot commenced to specialize in casting and allied equipment thirty-five years ago, by introducing a hand-swinging casting appliance.

Since 1940 eight different types of spring-energized casting machines have been



developed, but for the purpose of the table demonstration only one, the Model A, was shown and explained.

A new electric furnace of low consumption and high efficiency, for heating the largest casting moulds, was in use at heat, accompanied by a duplicate stripped of the jacket, so that the internal construction of furnace proper supported by the transformer could be seen.

Casting procedure was explained very briefly and members' questions answered by experienced representatives. Time did not allow of a detailed description of casting and heating techniques, but many pamphlets were available for those interested, particularly pamphlet 1013 Model A Casting Machine, and pamphlet 1040, Diatherm Furnace.

A complete text-book on casting was also shown, a limited number of copies of which are still available.